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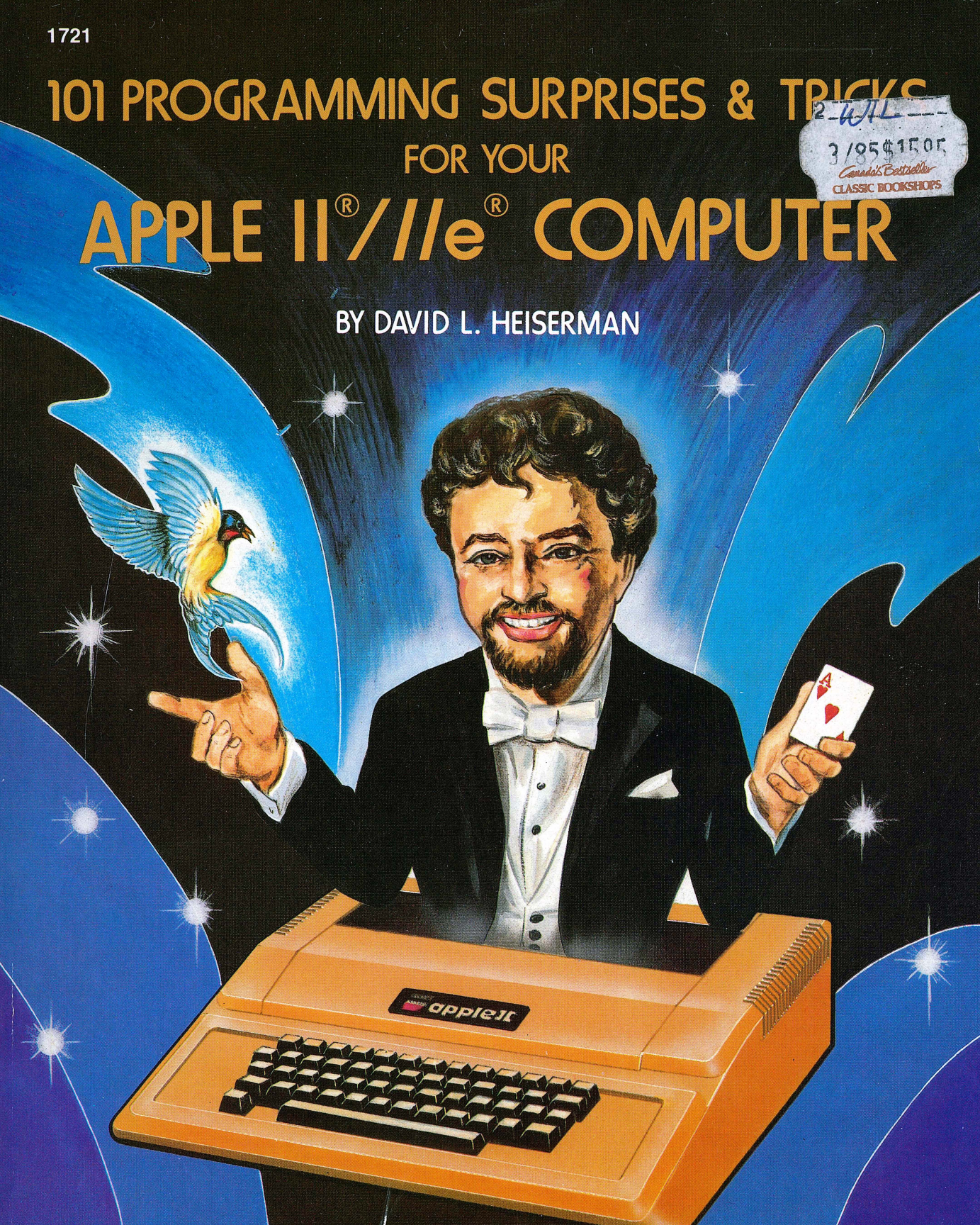
101 PROGRAMMING SURPRISES & TRICKS FOR YOUR APPLE II®/IIe® COMPUTER

Canada's Bestseller
CLASSIC BOOKSHOPS

BY DAVID L. HEISERMAN



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FOR YOUR
APPLE II®/IIe® COMPUTER

BY DAVID L. HEISERMAN

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Preface

Sophistication knows no bounds for the enlightened.

—From *Modern Wisdom and Conundrums*

The quotation shown above has no relevance here, but I thought it sounded pretty good. No one reads the preface of a book, anyway—so it really doesn't matter.

Come to think of it, though, this book might at least appear to offer some enlightenment, especially to someone who doesn't know how to work a home computer. It might look terribly sophisticated to someone like that. In fact, you can impress people even more by cutting the cover off a copy of *War and Peace* and gluing it over this one. You'll have room for your lunch in here, too.

No, there isn't much relevance to anything within these pages. And there is no overabundance of reverence for the modern computer world, either.

Let me tell you something: if you are still reading this preface, you belong to a unique group of individuals. For that reason, you deserve to know more about this book. That's what a preface is for.

This book of programs is mainly intended for BASIC programmers who have gotten tired of doing the same old things—and, indeed, such things are getting tiresome these days. I must confess that a couple of these programs are much like the "same old things," but perhaps better presented, easier to enter into your computer, and more fun to use.

"Fun." I just said, "fun." That's what this book is all about. And I don't mean just programs that are fun. I mean the whole idea is fun. In many instances, I don't give you the slightest hint about what the program does—those are the little jokes I pull on you. Then some of the programs give you a chance to pull some fast ones on your friends (or enemies). Tired of the same old computerized high-low guessing games? Well, how about one that lets you sort of . . . well, load the game in your favor?

Want to show friends how you keep track of the stock market or the world monetary system? There are programs for doing that. Or if you are willing to acknowledge the darker side of your personality, how about programs that let you copy those so-called copy-protected disks and peek into high-class computers anywhere in the country? It's all here, in a manner of speaking.

There's 101 programs for your Apple II or *II*e home computer. Most of them are rather short so that you will not have to labor at the keyboard very long. Leaf through the pages, find a title that strikes your fancy, and go to work on it. There are enough programs to keep you going that way for quite some time.

People ask, "Did you make up all these programs?" I first respond by saying that you don't have to look very far to find hundreds of examples of unenlightening and unsophisticated programs. But after saying that, I begin feeling bad about knocking the software business, and explain that I had a lot of help from some nice people—namely Robin Yates and Kevin Abnett. Robin formatted the manuscript and played with the programs to her heart's content on our resident Apples. Kevin drafted most of the programs, but he is still grumbling about how I always changed things in them.

We dug up a few ideas, and most of the quotations, from standard library sources and the waste dumpsters in the parking lots of high-tech consulting firms. Then there was this one idea I found on a piece of paper in a water puddle in Indianapolis. I didn't use it in this book, however.

Program 1 WATCH THIS!

"The real danger is not that computers will begin to think like men, but that men will begin to think like computers."

—Sydney J. Harris

```
10  REM  ** WATCH THIS **
20  REM
30  TEXT : HOME
40  FOR N = 1 TO 5
50  READ D:C$ =  CHR$ (D)
60 H = N + 17
70  GOSUB 210
80  NEXT N
90  FOR N = 1 TO 5: CALL  - 198: NEXT N
100  HTAB 18: VTAB 20: PRINT  CHR$ (32)
110  HTAB 18: VTAB 19: PRINT "O"
120  FOR H = 18 TO 23
130  HTAB H - 1: VTAB 19: PRINT  CHR$ (32)
140  HTAB H: VTAB 19: PRINT "O"
150  FOR T = 0 TO 20: NEXT T
160  NEXT H
170  HTAB 23: VTAB 19: PRINT  CHR$ (32)
180  HTAB 23: VTAB 20: PRINT "O"
190  HTAB 11: VTAB 23: PRINT "I AM YOUR COMPUTER";
200  END
210  FOR V = 2 TO 20
220  HTAB H: VTAB V - 1
230  PRINT  CHR$ (32)
240  HTAB H: VTAB V
250  PRINT C$
260  FOR T = 0 TO 20: NEXT T
270  NEXT V
280  RETURN
290  DATA  79,72,69,76,76
```

Program 2 MISSION IMPOSSIBLE

"Who knows what evil lurks in the hearts of men?"

—The Shadow

```
10  REM  ** MISSION IMPOSSIBLE **
20  REM
30 M$ = ""
40  FOR K = 1 TO 11:M$ = M$ +  CHR$ (32): NEXT K
50 M$ = M$ + "MISSION IMPOSSIBLE" +  CHR$ (13)
60  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
70  TEXT : HOME : PRINT M$
80  PRINT "PLEASE ENTER YOUR LAST NAME:"
90  PRINT
100  INPUT "";N$
110  IF  LEN (N$) < 1 THEN 100
120  VTAB 10
130  FOR T = 1 TO 4
140  READ T$(T)
150  PRINT  TAB( 5)T" -- "T$(T)
160  NEXT T
170  PRINT : PRINT "SELECT A TITLE (1-4):";
180  GET T$
190  IF T$ < "1" OR T$ > "4" THEN 180
200 T =  VAL (T$)
210 T$ = T$(T)
220  IF T = 4 THEN T$ = "(WHATEVER)"
230  HOME : PRINT M$
240  PRINT "GOOD MORNING, "T$ SPC( 1)N$
250  PRINT : PRINT  TAB( 5)"THIS MAN, DAVID L. HEISERMAN, IS"
260  PRINT "A DANGEROUS CROOK. STRIKE ANY KEY TO"
270  PRINT "SEE A PICTURE OF HIM ..."
280  PRINT : GET K$
290  HOME : POKE 36,5
300  PRINT : PRINT
310  PRINT "          ((()))"
320  PRINT "        ((((()))))"
330  PRINT "       ((((((()))))"
340  PRINT "      ((((  ()  ))))"
350  PRINT "      ((          ))"
360  PRINT "     ((( <*>  <*> )))"
370  PRINT "     ((     JL     ))"
380  PRINT "     ((     AA     ))"
390  PRINT "    ((      ----     ))"
400  PRINT "    (X     XXXX     X)"
410  PRINT "   XX XXXXX  XXXXX XX"
420  PRINT "   XXXX _________ XXXX"
430  PRINT "    XX  (|||||||)  XX "
440  PRINT "     X  (_______)  X "
```

```
450  PRINT "      XX          XX "
460  PRINT "       XXXXXXXXXXX"
470  PRINT "        XXXXXXXXX"
480  PRINT "          XXXXX"
490  VTAB 22: PRINT "STRIKE ANY KEY TO CONTINUE ...";
500  GET K$
510  HOME : PRINT M$
520  PRINT "HE IS GETTING WEALTHY BY WRITING FAKE"
530  PRINT "BOOKS ON COMPUTER PROGRAMMING (SUCH"
540  PRINT "AS THIS ONE)."
550  FOR T = 1 TO 1800: NEXT T
560  VTAB 16: PRINT "YOUR MISSION, SHOULD YOU DECIDE TO"
570  PRINT "ACCEPT IT, IS TO TRY THE PROGRAMS IN"
580  PRINT "THIS BOOK ... AND HAVE A LOT OF FUN"
590  PRINT "(HE ALREADY GOT YOUR MONEY).
600  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
610  GET K$
620  HOME : PRINT M$
630  PRINT : FLASH : PRINT "THIS PROGRAM WILL SELF DESTRUCT IN 5
640  PRINT "SECONDS": NORMAL
650  FOR T = 1 TO 400
660  IF T / 15 =  INT (T / 15) THEN C =  PEEK ( - 16336)
670  NEXT T
680  HOME : PRINT M$: VTAB 10
690  PRINT : INVERSE : PRINT "MESSAGE ERASED": NORMAL
700  FOR K = 1 TO 5: CALL ( - 198): NEXT K
710  END
720  DATA  MR.,MRS.,MS.,NONE OF THE ABOVE
```

Program 3 MOVING MESSAGE

"The fact that silence is golden may explain why there is so little of it."

—Anonymous

```
10  REM   ** MOVING MESSAGE GENERATOR **
20  REM
30  REM
40  FOR N = 0 TO 39:MH$ = MH$ + "*": NEXT N
50  TEXT : HOME
60  PRINT "MOVING-MESSAGE GENERATOR"
70  PRINT MH$: PRINT
80  PRINT "ENTER ANY MESSAGE UP TO 170 CHARACTERS"
90  PRINT "LONG (ABOUT FOUR FULL LINES OR LESS)."
100  PRINT : PRINT "ENCLOSE THE MESSAGE IN QUOTATION MARKS"
110  PRINT "IF YOU PLAN TO USE ANY COMMAS OR APOS-"
120  PRINT "TROPHES."
130  PRINT : INPUT M$
140  IF  LEN (M$) <  = 170 THEN 160
150  PRINT : PRINT "MESSAGE IS TOO LONG. TRY AGAIN ...": GOTO 130
160  VTAB 20: PRINT "STRIKE ANY KEY TO BEGIN THE MOVING"
170  PRINT "MESSAGE; THEN AGAIN STRIKE ANY KEY TO"
180  PRINT "END THE PROGRAM.";
190  GET K$
200  HOME
210 N$ = ""
220  FOR K = 1 TO 40:N$ = " " + N$: NEXT K
230 M$ = N$ + M$
240  HTAB 1: VTAB 10: PRINT MH$
250  HTAB 1: VTAB 14: PRINT MH$
260  FOR N = 2 TO  LEN (M$)
270 P$ =  MID$ (M$,N) +  LEFT$ (M$,N - 1)
280  VTAB 12: HTAB 1
290  PRINT  LEFT$ (P$,40)
300  FOR T = 1 TO 100: NEXT T
310 K =  PEEK (49152): POKE 49168,0
320  IF K > 127 THEN  HOME : END
330  NEXT N
340  GOTO 260
```

Program 4 CURRENT TIME

"No hand can make the clock strike for me the hours that are passed."

—Byron

```
10  REM  ** CURRENT TIME **
20  REM
30  FOR N = 1 TO 40:X$ = X$ + "=": NEXT N
40  TEXT : HOME
50  PRINT "SET THE CURRENT TIME:"
60  PRINT X$: PRINT
70  PRINT "ENTER THE CURRENT HOUR (1-12) ";
80  INPUT "";CH:CH =  INT (CH)
90  IF CH > 0 AND CH <  = 12 THEN 110
100  PRINT "TRY AGAIN ...";: GOTO 80
110  PRINT : PRINT "ENTER THE CURRENT MINUTE (0-59) ";
120  INPUT "";CM:CM =  INT (CM)
130  IF CM >  = 0 AND CM <  = 59 THEN 150
140  PRINT "TRY AGAIN ...";: GOTO 120
150  HOME : PRINT "CURRENT TIME (MORE OR LESS)"
160  PRINT X$
170  HTAB 1: VTAB 21
180  PRINT "STRIKE ANY KEY TO DO SOMETHING ELSE ...";
190  FOR HR = CH TO 12
200  FOR MN = CM TO 59
210  FOR SC = 0 TO 59
220 HR$ = "0" +  STR$ (HR)
230  IF  LEN (HR$) > 2 THEN HR$ =  RIGHT$ (HR$,2)
240 MN$ = "0" +  STR$ (MN)
250  IF  LEN (MN$) > 2 THEN MN$ =  RIGHT$ (MN$,2)
260 SC$ = "0" +  STR$ (SC)
270  IF  LEN (SC$) > 2 THEN SC$ =  RIGHT$ (SC$,2)
280 T$ = HR$ + ":" + MN$ + ":" + SC$
290  HTAB 1: VTAB 4
300  INVERSE : PRINT T$: NORMAL
310  FOR T = 0 TO 37
320 K =  PEEK ( - 16384): POKE  - 16368,0
330  IF K > 127 THEN  VTAB 22: END
340  NEXT T
350  NEXT SC,MN
360 CM = 0: NEXT HR
370 CH = 1: GOTO 190
```

Program 5 PERPETUAL CALENDAR

"Like sands through the hourglass, so are the days of our lives."

—NBC's *Days of Our Lives*

```
10  REM  ** PERPETUAL CALENDAR **
20  REM
30  FOR K = 1 TO 11:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "PERPETUAL CALENDAR" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  FOR K = 1 TO 8: READ D$(K): NEXT K
70  TEXT : HOME : PRINT M$
80  PRINT "ENTER A YEAR (1500-2000) ";
90  INPUT "";YR
100 YR =  INT (YR)
110  IF YR <  = 2000 AND YR >  = 1500 THEN 130
120  PRINT "BETWEEN 1500 AND 2000 ";: GOTO 90
130  PRINT : PRINT "ENTER A MONTH (1-12) ";
140  INPUT "";MT
150  IF MT >  = 1 AND MT <  = 12 THEN 170
160  PRINT "BETWEEN 1 AND 12 ";: GOTO 140
170  PRINT : PRINT "ENTER THE DAY OF THE MONTH (1-31) ";
180  INPUT DT
190 DT =  INT (DT)
200  IF DT >  = 1 AND DT <  = 31 THEN 220
210  PRINT "BETWEEN 1 AND 31 ";: GOTO 180
220 YD = YR - 1804:DC = 0
230  FOR K = 1 TO YD
240 DC = DC + 365
250  IF K / 4 =  INT (K / 4) THEN DC = DC + 1
260  NEXT K
270  IF YR / 4 =  INT (YR / 4) THEN DC = DC + 1
280 DC = DC + DT
290 MO = MT
300  IF MO = 2 THEN DC = DC + 31
310  IF MO = 3 THEN DC = DC + 59
320  IF MO = 4 THEN DC = DC + 90
330  IF MO = 5 THEN DC = DC + 120
340  IF MO = 6 THEN DC = DC + 151
350  IF MO = 7 THEN DC = DC + 181
360  IF MO = 8 THEN DC = DC + 212
370  IF MO = 9 THEN DC = DC + 243
380  IF MO = 10 THEN DC = DC + 273
390  IF MO = 11 THEN DC = DC + 304
400  IF MO = 12 THEN DC = DC + 334
410 XG = 7 *  INT (DC / 7)
420 DN = DC - XG
430  IF DN = 0 THEN DN = 7
440  HOME : PRINT M$
450  PRINT MO"-"DT"-"YR
460  PRINT : PRINT " FALLS ON A "D$(DN)
470  VTAB 21: PRINT "DO YOU WANT ANOTHER DATE (Y/N)";
480  GET K$: IF K$ = "Y" THEN 70
```

```
490  IF K$ <  > "N" THEN 480
500  HOME : END
510  DATA  SUNDAY,MONDAY,TUESDAY
520  DATA  WEDNESDAY,THURSDAY,FRIDAY
530  DATA  SATURDAY,SUNDAY
```

Program 6 HOME RECIPES

"Bon appetit!"

—Julia Child

Are you getting tired of meals that are prepared from the same old recipes? Here is your chance to load your recipe file with an endless variety of new, creative, and challenging gastronomy.

```
10  REM  ** HOME RECIPES **
20  REM
30  DIM A$(50),E$(50),I$(50),Q$(50)
40  FOR N = 1 TO 40:Y$ = Y$ + "%": NEXT N
50 M$ = "HOME RECIPES" +  CHR$ (13) + Y$
60  TEXT : HOME : PRINT M$
70  PRINT "HI. WHAT IS YOUR FIRST NAME?"
80  INPUT N$
90  IF  LEN (N$) > 1 THEN 120
100  PRINT "YOU'RE KIDDING. TRY AGAIN"
110  PRINT : GOTO 80
120 T$ = "ACTION": GOSUB 470
130  FOR A = 1 TO N:A$(A) = E$(A): NEXT A
140 NA = N - 1
150 T$ = "QUANTITY": GOSUB 470
160  FOR Q = 1 TO N:Q$(Q) = E$(Q): NEXT Q
170 NQ = N - 1
180 T$ = "INGREDIENT": GOSUB 470
190  FOR I = 1 TO N:I$(I) = E$(I): NEXT I
200 NI = N - 1
210 NR = 1:N$ = N$ + "'S RECIPE NO. "
220  HOME : PRINT N$;NR; CHR$ (13);Y$
230  FOR NL = 1 TO  INT (10 *  RND (1)) + 1
240  PRINT A$( INT (NA *  RND (1)) + 1);
250  PRINT  SPC( 1)Q$( INT (NQ *  RND (1)) + 1);
260  PRINT  SPC( 1)I$( INT (NI *  RND (1)) + 1)
270  NEXT NL
280  VTAB 20: PRINT "STRIKE THE SPACE BAR TO SEE A DIFFERENT"
290  PRINT "RECIPE (OR THE X KEY TO DO SOMETHING"
300  PRINT "ELSE) ...";
310  GET K$
320  IF K$ =  CHR$ (32) THEN NR = NR + 1: GOTO 220
330  IF K$ = "X" THEN  HOME : END
340  GOTO 310
350 N = 1:CV =  PEEK (37)
360  PRINT T$" #"N": ";: CALL  - 868
370  INPUT "";K$
380  IF  LEN (K$) < 1 THEN 360
390  IF K$ <  > "###" THEN 420
400  IF N > 1 THEN 460
410  PRINT "ENTER AT LEAST ONE "T$: GOTO 360
420 E$(N) = K$:N = N + 1
430  IF N > 50 THEN 460
```

```
440  IF  PEEK (37) > 22 THEN  POKE 37,CV - 1
450  GOTO 360
460  RETURN
470  HOME : PRINT M$
480  PRINT T$" ENTRY PHASE.": PRINT
490  PRINT "ENTER AT LEAST ONE, AND AS MANY AS 50"
500  PRINT "EXPRESSIONS SUCH AS:": PRINT
510  FOR N = 1 TO 5
520  READ D$: PRINT  TAB( 5)D$
530  NEXT N
540  PRINT : PRINT "ENTER ### TO END YOUR LIST."
550  PRINT : GOSUB 350: RETURN
560  DATA  STIR IN,BLEND,MASH,BAKE,ADD
570  DATA  1 CUP,2 TABLESPOONS,1 PINCH,4 QUARTS,1 PACKAGE
580  DATA  FROZEN PEAS,HORSERADISH,SUGAR,SALT,ORANGE JUICE
```

Program 7 ALARM CLOCK

"We do more before 9 a.m. than most people do all day."
—U.S. Army recruiting slogan

```
10  REM   ** ALARM CLOCK **
20  REM
30  FOR K = 1 TO 14:M$ = M$ + " ": NEXT K
40 M$ = M$ + "ALARM CLOCK" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70 T$ = "CURRENT": GOSUB 460
80 HR = H:MN = M
90 T$ = "ALARM": GOSUB 460
100 AH = H:AN = M
110 SC = 0
120  HOME : PRINT M$
130  VTAB 10: POKE 36,15
140 SG = MN: GOSUB 250
150 MN$ = W$:SG = HR: GOSUB 250
160 HR$ = W$:SG = SC: GOSUB 250
170 C$ = W$
180  PRINT HR$":"MN$":"C$
190  GOSUB 330
200  FOR T = 0 TO 440: NEXT T
210 SC = SC + 1: IF SC < 60 THEN 130
220 SC = 0:MN = MN + 1: IF MN < 60 THEN 130
230 MN = 0:HR = HR + 1: IF HR < 24 THEN 130
240 HR = 1: GOTO 130
250 SX = SG:LX = SX
260 LX = SX
270 LX = LX - 10: IF LX > 9 THEN 270
280  IF LX < 0 THEN LX = LX + 10
290 HX = (SX - LX) / 10
300 B$ =  CHR$ (HX + 48):L$ =  CHR$ (LX + 48)
310 W$ = B$ + L$
320  RETURN
330  IF AN <  > MN THEN  RETURN
340  IF AH <  > HR THEN  RETURN
350 A$ = ""
360  HTAB 12: VTAB 15
370  PRINT A$;: FLASH : PRINT "**** ALARM ****"
380  NORMAL
390  VTAB 21
400  PRINT "STRIKE ANY KEY TO SILENCE"
410  PRINT "THE ALARM ...";
420  CALL  - 198: FOR T = 0 TO 10: NEXT T
430 S =  PEEK ( - 16384): POKE  - 16368,0
440  IF S > 127 THEN  HOME : END
```

```
450  GOTO 420
460  PRINT : PRINT "ENTER "T$" HOUR (Ø - 23) ";
470  INPUT "";H
480  IF H >  = Ø AND H < 24 THEN 510
490  PRINT : PRINT "USE Ø THRU 23 HOURS, PLEASE."
500  PRINT "TRY AGAIN ...";: GOTO 470
510  PRINT : PRINT "ENTER "T$" MINUTE (Ø - 59) ";
520  INPUT "";M
530  IF M >  = Ø AND M < 60 THEN  RETURN
540  PRINT : PRINT "USE Ø THRU 59 MINUTES, PLEASE."
550  PRINT "TRY AGAIN ...";: GOTO 520
```

Program 8 TIPSY TRANSLATOR

"Urp . . ."

—Overheard in a bar in Cleveland

```
10  REM  ** TIPSY TRANSLATOR **
20  REM
30  FOR K = 1 TO 10:MH$ = MH$ +  CHR$ (32): NEXT K
40 MH$ = MH$ + "TIPSY TRANSLATOR" +  CHR$ (13)
50  FOR K = 1 TO 40:MH$ = MH$ + "=": NEXT K
60  HOME : PRINT MH$
70  PRINT "THIS IS A VERY SOPHISTICATED PROGRAM"
80  PRINT "THAT TRANSLATES THE WORDS OF A SOBER"
90  PRINT "INDIVIDUAL INTO THE MUTTERINGS OF ONE"
100  PRINT "WHO HAS TIPPED A FEW TOO MANY GLASSES."
110  VTAB (22): PRINT "STRIKE ANY KEY TO BEGIN ...";
120  GET K$
130  HOME : PRINT MH$
140  PRINT "ENTER AN ENGLISH PHRASE, SENTENCE,"
150  PRINT "OR PARAGRAPH OF 150 CHARACTERS OR"
160  PRINT "LESS.  ENCLOSE THE ENTIRE ENTRY IN"
170  PRINT "QUOTES IF YOU PLAN TO USE ANY COMMAS"
180  PRINT "OR APOSTROPHES."
190  PRINT : PRINT
200  INPUT M1$
210  IF  LEN (M1$) < 1 THEN 200
220  IF  LEN (M1$) < 151 THEN 260
230  PRINT : PRINT "SHORRY ... TOO LONG."
240  PRINT "TRY AGAIN IN A MOMENT ..."
250  FOR T = 0 TO 1000: NEXT T: GOTO 130
260  HOME : PRINT MH$
270  PRINT
280 M$ = M1$: GOSUB 520:M1$ = M$
290  PRINT
300 M2$ = ""
310  FOR N = 1 TO  LEN (M1$)
320 M$ =  MID$ (M1$,N,1)
330  IF M$ = "F" THEN M$ = "PH": GOTO 380
340  IF M$ = "S" THEN M$ = "SH": GOTO 380
350 M$ =  MID$ (M1$,N,2)
360  IF M$ = "GH" THEN M2$ = M2$ + "F":N = N + 1: GOTO 390
370 M$ =  MID$ (M1$,N,1)
380 M2$ = M2$ + M$
390  NEXT N
400  PRINT
410  FOR N = 1 TO 40: PRINT "=";: NEXT N
420  PRINT "TIPSY TRANSLATION:": PRINT
430 M$ = M2$: GOSUB 520
440  HTAB 1: VTAB 20
450  PRINT "STRIKE RETURN TO DO ANOTHER TRANSLATION"
460  HTAB 6
470  PRINT "(OR STRIKE THE X KEY TO END)"
480  GET K$
```

```
490  IF  ASC (K$) = 13 THEN 130
500  IF K$ = "X" THEN  HOME : END
510  GOTO 480
520  FOR N = 1 TO  LEN (M$)
530 C =  ASC ( MID$ (M$,N,1))
540  PRINT  CHR$ (C);
550  IF  POS (X) > 35 AND C = 32 THEN  PRINT
560  NEXT N
570  RETURN
```

Program 9 ENGLISH-BOSTONEESE

"In Boston they ask, How much does he know? In New York, How much is he worth? In Philadelphia, Who were his parents?"

—Mark Twain

```
10  REM  ** ENGLISH TO BOSTONEESE TRANSLATOR **
20  REM
30 MH$ = "ENGLISH TO BOSTONEESE TRANSLATOR"
40  FOR N = 0 TO 39:X$ = X$ + "=": NEXT N
50 MH$ = MH$ +  CHR$ (13) + X$
60  TEXT : HOME : PRINT MH$
70  PRINT "THIS IS A LANGUAGE TRANSLATION PROGRAM "
80  PRINT "THAT TRANSLATES ORDINARY ENGLISH INTO"
90  PRINT "AN EQUIVALENT FORM THAT IS GENERALLY"
100  PRINT "USED BY PEOPLE IN THE BOSTON AREA."
110  PRINT : PRINT "YOU HAVE, IN ESSENCE, A FINE OPPOR-"
120  PRINT "TUNITY TO COMPARE THIS UNIQUE DIALECT"
130  PRINT "WITH YOUR OWN."
140  VTAB 20: PRINT "STRIKE ANY KEY TO BEGIN ...";
150  GET K$
160  HOME : PRINT MH$
170  PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
180  PRINT "OR PARAGRAPH OF 120 CHARACTERS OR"
190  PRINT "LESS (ABOUT THREE FULL LINES). EN-"
200  PRINT "CLOSE THE ENTIRE ENTRY IN QUOTES"
210  PRINT "IF YOU PLAN TO USE ANY COMMAS OR"
220  PRINT "APOSTROPHES."
230  PRINT
240  INPUT M1$
250  IF  LEN (M1$) < 1 THEN 160
260  IF  LEN (M1$) < 120 THEN 290
270  PRINT "SORRY, TOO MANY CHARACTERS."
280  PRINT "TRY AGAIN ...": PRINT : GOTO 240
290  HOME : PRINT MH$
300  PRINT "ORIGINAL VERSION:": PRINT
310 M$ = M1$: GOSUB 550:M1$ = M$
320  HTAB 1: VTAB 20: PRINT "PLEASE WAIT A MOMENT ...";
330 M2$ = ""
340  FOR N = 1 TO  LEN (M1$)
350  IF  MID$ (M1$,N,2) = "AR" THEN M$ = "AH":N = N + 1: GOTO 390
360  IF  MID$ (M1$,N,2) = "ER" THEN M$ = "A": GOTO 390
370  IF  MID$ (M1$,N,1) = "O" THEN M$ = "AH": GOTO 390
380 M$ =  MID$ (M1$,N,1)
390 M2$ = M2$ + M$
400  NEXT N
410  HTAB 1: VTAB 20: PRINT "STRIKE ANY KEY TO SEE THE"
420  PRINT "BOSTONEESE VERSION ...";
430  GET K$
440  HOME : PRINT MH$
450  PRINT "BOSTONEESE VERSION:": PRINT
460 M$ = M2$: GOSUB 550
470  HTAB 1: VTAB 20
```

```
480  PRINT "STRIKE THE RETURN KEY TO DO ANOTHER"
490  PRINT "TRANSLATION (OR STRIKE THE X KEY "
500  PRINT "TO END THE PROGRAM) ...";
510  GET K$
520  IF  ASC (K$) = 13 THEN 160
530  IF K$ = "X" THEN  HOME : END
540  GOTO 510
550  FOR N = 1 TO  LEN (M$)
560 C =  ASC ( MID$ (M$,N,1))
570  PRINT  CHR$ (C);
580  IF  POS (X) > 35 AND C = 32 THEN  PRINT
590  NEXT N
600  RETURN
```

Program 10 ENGLISH-BROOKLYNEESE

"Wanna buy a bridge?"

—Anonymous

Notice: Similarities between this dialect and that of certain neighborhoods in Philadelphia is purely coincidental. However, the author expects to receive windfall royalties from anyone using this program to generate dialogue for movies titled *ROCKY IV* through *ROCKY XXIV.*

```
10  REM   ** ENGLISH-TO-BROOKLYNEESE TRANSLATOR **
20  REM
30 MH$ = "  ENGLISH TO BROOKLYNEESE TRANSLATOR"
40  FOR N = 0 TO 39:X$ = X$ + "=": NEXT N
50 MH$ = MH$ +  CHR$ (13) + X$
60  TEXT : HOME : PRINT MH$
70  PRINT "THIS IS A LANGUAGE-TRANSLATION PROGRAM"
80  PRINT "THAT TRANSFORMS ORDINARY ENGLISH INTO"
90  PRINT "AN EQUIVALENT FORM THAT IS GENERALLY"
100  PRINT "USED BY PEOPLE FROM THE BROOKLYN, NEW"
110  PRINT "YORK, AREA."
120  PRINT : PRINT "YOU HAVE, IN ESSENCE, A FINE OPPOR-"
130  PRINT "TUNITY TO COMPARE THIS UNIQUE DIALECT"
140  PRINT "WITH YOUR OWN."
150  VTAB 20: PRINT "STRIKE ANY KEY TO BEGIN ...";
160  GET K$
170  HOME : PRINT MH$
180  PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
190  PRINT "OR PARAGRAPH OF 120 CHARACTERS OR"
200  PRINT "LESS (ABOUT THREE FULL LINES). EN-"
210  PRINT "CLOSE THE ENTIRE ENTRY IN QUOTES"
220  PRINT "IF YOU PLAN TO USE ANY COMMAS OR"
230  PRINT "APOSTROPHES."
240  PRINT
250  INPUT M1$
260  IF  LEN (M1$) < 1 THEN 170
270  IF  LEN (M1$) < 120 THEN 300
280  PRINT "SORRY, TOO MANY CHARACTERS."
290  PRINT "TRY AGAIN ...": PRINT : GOTO 250
300  HOME : PRINT MH$
310  PRINT "ORIGINAL VERSION:": PRINT
320 M$ = M1$: GOSUB 540:M1$ = M$
330  HTAB 1: VTAB 20: PRINT "PLEASE WAIT A MOMENT ...";
340 M2$ = ""
350  FOR N = 1 TO  LEN (M1$)
360  IF  MID$ (M1$,N,2) = "TH" THEN M$ = "D":N = N + 1: GOTO 380
370 M$ =  MID$ (M1$,N,1)
380 M2$ = M2$ + M$
390  NEXT N
400  HTAB 1: VTAB 20: PRINT "STRIKE ANY KEY TO SEE THE"
410  PRINT "BROOKLYNEESE VERSION ...";
420  GET K$
```

```
430  HOME : PRINT MH$
440  PRINT "BROOKLYNEESE VERSION:": PRINT
450 M$ = M2$: GOSUB 540
460  HTAB 1: VTAB 20
470  PRINT "STRIKE THE RETURN KEY TO DO ANOTHER"
480  PRINT "TRANSLATION (OR STRIKE THE X KEY"
490  PRINT "TO END THE PROGRAM) ...";
500  GET K$
510  IF  ASC (K$) = 13 THEN 170
520  IF K$ = "X" THEN  HOME : END
530  GOTO 500
540  FOR N = 1 TO  LEN (M$)
550 C =  ASC ( MID$ (M$,N,1))
560  PRINT  CHR$ (C);
570  IF  POS (X) > 35 AND C = 32 THEN  PRINT
580  NEXT N
590  RETURN
```

Program 11 ENGLISH-GERMAN-ENGLISH

"Was duckt un zuckt ihr?"

—Overheard in drugstore in Stuttgart

```
10  REM   ** ENGLISH-GERMAN-ENGLISH TRANSLATOR **
20  REM
30 MH$ = "ENGLISH-GERMAN-ENGLISH TRANSLATOR"
40  FOR N = 0 TO 39:X$ = X$ + "=": NEXT N
50 MH$ = MH$ +  CHR$ (13) + X$
60  TEXT : HOME : PRINT MH$
70  PRINT : PRINT "THIS IS AN INCREDIBLY SOPHISTICATED"
80  PRINT "LANGUAGE TRANSLATION PROGRAM.  IT NOT"
90  PRINT "ONLY TRANSLATES FROM ENGLISH TO GERMAN,"
100  PRINT "BUT TRANSLATES GERMAN BACK TO ENGLISH"
110  PRINT "FOR YOU."
120  PRINT : PRINT "YOU HAVE, IN ESSENCE, A FINE OPPOR-"
130  PRINT "TUNITY TO SEE HOW GERMAN-SPEAKING"
140  PRINT "PEOPLE PERCEIVE YOUR WORDS."
150  VTAB 20: PRINT "STRIKE ANY KEY TO BEGIN ...";
160  GET K$
170  HOME : PRINT MH$
180  PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
190  PRINT "OR PARAGRAPH OF 120 CHARACTERS OR"
200  PRINT "LESS (ABOUT THREE FULL LINES). EN-"
210  PRINT "CLOSE THE ENTIRE ENTRY IN QUOTES"
220  PRINT "IF YOU PLAN TO USE ANY COMMAS OR"
230  PRINT "APOSTROPHES."
240  PRINT
250  INPUT M1$
260  IF  LEN (M1$) < 1 THEN 170
270  IF  LEN (M1$) < 120 THEN 300
280  PRINT "SORRY, TOO MANY CHARACTERS."
290  PRINT "TRY AGAIN ...": PRINT : GOTO 250
300  HOME : PRINT MH$
310  PRINT : PRINT "ORIGINAL ENGLISH VERSION:"
320  PRINT : PRINT
330 M$ = M1$: GOSUB 660:M1$ = M$
340  HTAB 1: VTAB 20: PRINT "PLEASE WAIT A MOMENT ...";
350 M2$ = ""
360  FOR N = 1 TO  LEN (M1$)
370  IF N > 1 THEN MB$ =  MID$ (M1$,N - 1,1)
380  IF  NOT (N = 1 OR MB$ =  CHR$ (32)) THEN 430
390  IF  MID$ (M1$,N,4) = "THE" +  CHR$ (32) THEN 720
400  IF  MID$ (M1$,N,4) = "AND" +  CHR$ (32) THEN 730
410  IF  MID$ (M1$,N,3) = "IS" +  CHR$ (32) THEN M$ = "IST": GOTO 500
420  IF  MID$ (M1$,N,2) = "QU" THEN 740
430 M$ =  MID$ (M1$,N,1)
440  IF N >  =  LEN (M1$) - 1 THEN 500
450 MA$ =  MID$ (M1$,N,1)
460  IF  ASC (MA$) = 32 THEN 490
470  IF M$ = "V" THEN M$ = "W": GOTO 500
480  IF M$ = "W" THEN M$ = "V"
```

```
490  IF M$ = "D" THEN M$ = "T"
500 M2$ = M2$ + M$
510  NEXT N
520  HTAB 1: VTAB 20: PRINT "STRIKE ANY KEY TO SEE THE"
530  PRINT "GERMAN-ENGLISH VERSION ...";
540  GET K$
550  HOME : PRINT MH$
560  PRINT : PRINT "GERMAN-ENGLISH TRANSLATION:": PRINT
570 M$ = M2$: GOSUB 660
580  HTAB 1: VTAB 20
590  PRINT "STRIKE THE RETURN KEY TO DO ANOTHER"
600  PRINT "TRANSLATION (OR STRIKE THE X KEY"
610  PRINT "TO END THE PROGRAM) ...";
620  GET K$
630  IF  ASC (K$) = 13 THEN 170
640  IF K$ = "X" THEN  HOME : END
650  GOTO 620
660  FOR N = 1 TO  LEN (M$)
670 C =  ASC ( MID$ (M$,N,1))
680  PRINT  CHR$ (C);
690  IF  POS (X) > 35 AND C = 32 THEN  PRINT
700  NEXT N
710  RETURN
720 M$ = "DER ":N = N + 3: GOTO 500
730 M$ = "UND ":N = N + 3: GOTO 500
740 M$ = "KV":N = N + 1: GOTO 500
```

Program 12 ENGLISH-JAPANESE-ENGLISH

"Ha-sha she yendo?"

—Overheard on a school bus in Albuquerque

```
10  REM   ** ENGLISH-JAPANESE-ENGLISH TRANSLATION PROGRAM **
20  REM
30 MH$ = "ENGLISH-JAPANESE-ENGLISH TRANSLATOR"
40  FOR N = 0 TO 39:X$ = X$ + "=": NEXT N
50 MH$ = MH$ +  CHR$ (13) + X$
60  TEXT : HOME : PRINT MH$
70  PRINT "THIS IS AN INCREDIBLY SOPHISTICATED"
80  PRINT "LANGUAGE-TRANSLATION PROGRAM. IT NOT"
90  PRINT "ONLY TRANSLATES FROM ENGLISH TO JAPAN-"
100  PRINT "ESE, BUT TRANSLATES THE JAPANESE BACK"
110  PRINT "INTO ENGLISH FOR YOU."
120  PRINT : PRINT "YOU HAVE, IN ESSENCE, A FINE OPPOR-"
130  PRINT "TUNITY TO SEE HOW JAPANESE-SPEAKING"
140  PRINT "PEOPLE PERCEIVE YOUR WORDS."
150  VTAB 20: PRINT "STRIKE ANY KEY TO BEGIN ...";
160  GET K$
170  HOME : PRINT MH$
180  PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
190  PRINT "OR PARAGRAPH OF 120 CHARACTERS OR"
200  PRINT "LESS (ABOUT THREE FULL LINES). EN-"
210  PRINT "CLOSE THE ENTIRE ENTRY IN QUOTES"
220  PRINT "IF YOU PLAN TO USE ANY COMMAS OR"
230  PRINT "APOSTROPHES."
240  PRINT
250  INPUT M1$
260  IF  LEN (M1$) < 1 THEN 170
270  IF  LEN (M1$) < 120 THEN 300
280  PRINT "SORRY, TOO MANY CHARACTERS."
290  PRINT "TRY AGAIN ...": PRINT : GOTO 250
300  HOME : PRINT MH$
310  PRINT "ORIGINAL ENGLISH VERSION:": PRINT
320 M$ = M1$: GOSUB 560:M1$ = M$
330  HTAB 1: VTAB 20: PRINT "PLEASE WAIT A MOMENT ...";
340 M2$ = ""
350  FOR N = 1 TO  LEN (M1$)
360 M$ =  MID$ (M1$,N,1)
370  IF M$ = "L" THEN M2$ = M2$ + "R": GOTO 400
380  IF M$ = "R" THEN M2$ = M2$ + "L": GOTO 400
390 M2$ = M2$ + M$
400  NEXT N
410  HTAB 1: VTAB 20: PRINT "STRIKE ANY KEY TO SEE THE"
420  PRINT "JAPANESE-ENGLISH VERSION ...";
430  GET K$
440  HOME : PRINT MH$
450  PRINT "JAPANESE-ENGLISH TRANSLATION:": PRINT
460  IF  INT (3 *  RND (1)) = 0 THEN M2$ = "AHH, SO! " + M2$
470 M$ = M2$: GOSUB 560
480  HTAB 1: VTAB 20
```

```
490  PRINT "STRIKE THE RETURN KEY TO DO ANOTHER"
500  PRINT "TRANSLATION (OR STRIKE THE X KEY"
510  PRINT "TO END THE PROGRAM) ...";
520  GET K$
530  IF  ASC (K$) = 13 THEN 170
540  IF K$ = "X" THEN  HOME : END
550  GOTO 520
560  FOR N = 1 TO  LEN (M$)
570 C =  ASC ( MID$ (M$,N,1))
580  PRINT  CHR$ (C);
590  IF  POS (X) > 35 AND C = 32 THEN  PRINT
600  NEXT N
610  RETURN
```

Program 13 ENGLISH-SPANISH-ENGLISH

"Tu llevas espinica entre los dientes!"

—Overheard in a restaurant in Boca Raton

```
10  REM   ** ENGLISH-SPANISH-ENGLISH TRANSLATION PROGRAM **
20  REM
30 MH$ = "ENGLISH-SPANISH-ENGLISH TRANSLATOR"
40  FOR N = 0 TO 39:X$ = X$ + "=": NEXT N
50 MH$ = MH$ +  CHR$ (13) + X$
60  TEXT : HOME : PRINT MH$
70  PRINT "THIS IS AN INCREDIBLY SOPHISTICATED"
80  PRINT "LANGUAGE-TRANSLATION PROGRAM. IT NOT"
90  PRINT "ONLY TRANSLATES FROM ENGLISH TO SPAN-"
100  PRINT "ISH, BUT TRANSLATES THE SPANISH BACK"
110  PRINT "INTO ENGLISH FOR YOU."
120  PRINT : PRINT "YOU HAVE, IN ESSENCE, A FINE OPPOR-"
130  PRINT "TUNITY TO SEE HOW SPANISH-SPEAKING"
140  PRINT "PEOPLE PERCEIVE YOUR WORDS."
150  VTAB 20: PRINT "STRIKE ANY KEY TO BEGIN ...";
160  GET K$
170  HOME : PRINT MH$
180  PRINT "ENTER AN ENGLISH PHRASE, SENTENCE"
190  PRINT "OR PARAGRAPH OF 120 CHARACTERS OR"
200  PRINT "LESS (ABOUT THREE FULL LINES). EN-"
210  PRINT "CLOSE THE ENTIRE ENTRY IN QUOTES"
220  PRINT "IF YOU PLAN TO USE ANY COMMAS OR"
230  PRINT "APOSTROPHES."
240  PRINT
250  INPUT M1$
260  IF  LEN (M1$) < 1 THEN 170
270  IF  LEN (M1$) <  = 120 THEN 300
280  PRINT "SORRY, TOO MANY CHARACTERS."
290  PRINT "TRY AGAIN ...": PRINT : GOTO 250
300  HOME : PRINT MH$
310  PRINT "ORIGINAL ENGLISH VERSION:": PRINT
320 M$ = M1$: GOSUB 570:M1$ = M$
330  HTAB 1: VTAB 20: PRINT "PLEASE WAIT A MOMENT ...";
340 M2$ = "":MB$ =  CHR$ (32)
350  FOR N = 1 TO  LEN (M1$)
360 M$ =  MID$ (M1$,N,1)
370  IF N > 1 THEN MB$ =  MID$ (M1$,N - 1,1)
380  IF  NOT (N = 1 OR  ASC (MB$) = 32) THEN 410
390  IF M$ = "S" THEN M2$ = M2$ + "E" + M$: GOTO 420
400  IF M$ = "I" THEN M2$ = M2$ + "EE": GOTO 420
410 M2$ = M2$ + M$
420  NEXT N
430  HTAB 1: VTAB 20: PRINT "STRIKE ANY KEY TO SEE THE"
440  PRINT "SPANISH-ENGLISH VERSION ...";
450  GET K$
460  HOME : PRINT MH$
470  PRINT "SPANISH-ENGLISH TRANSLATION:": PRINT
480 M$ = M2$: GOSUB 570
```

```
490  HTAB 1: VTAB 20
500  PRINT "STRIKE THE RETURN KEY TO DO ANOTHER"
510  PRINT "TRANSLATION (OR STRIKE THE X KEY"
520  PRINT "TO END THE PROGRAM) ...";
530  GET K$
540  IF  ASC (K$) = 13 THEN 170
550  IF K$ = "X" THEN  HOME : END
560  GOTO 530
570  FOR N = 1 TO  LEN (M$)
580 C =  ASC ( MID$ (M$,N,1))
590  PRINT  CHR$ (C);
600  IF  POS (X) > 35 AND C = 32 THEN  PRINT
610  NEXT N
620  RETURN
```

Program 14 PIG-LATIN GENERATOR

"Ifa ouya anca eadra istha, ouya area oota arnda osecla."

—Ullafa Olonyba

It is often difficult to assess the most positive elements of modernized American education. It is far easier to feel badly about what has been lost. Four generations of Americans have not been exposed to the beauty and cultural insight that is inherent in a serious study of Pig Latin.

```
10  REM  ** PIG-LATIN GENERATOR **
20  REM
30  FOR N = 1 TO 10:H$ = H$ +  CHR$ (32): NEXT N
40 H$ = H$ + "PIG-LATIN GENERATOR" +  CHR$ (13)
50  FOR N = 1 TO 40:H$ = H$ + ",": NEXT N
60  DIM W$(101)
70  TEXT : HOME : PRINT H$
80  PRINT "ENTER A PLAIN-ENGLISH PHRASE OR SEN-"
90  PRINT "TENCE OF LESS THAN 100 WORDS. PLEASE"
100  PRINT "USE NO PUNCTUATION AND DO NOT STRIKE"
110  PRINT "THE RETURN KEY UNTIL YOU ARE DONE."
120  PRINT
130  INPUT P$
140  IF  LEN (P$) > 1 THEN 170
150  PRINT : PRINT "QUIT FOOLING AROUND. TRY AGAIN ..."
160  PRINT : GOTO 130
170  IF  LEN (P$) < 220 THEN 210
180  PRINT : PRINT "SORRY, TOO MANY CHARACTERS."
190  PRINT "ENTER AGAIN AS SOON AS WE'RE SET UP.
200  FOR T = 0 TO 2500: NEXT T: GOTO 70
210  HOME : PRINT H$
220  PRINT "HERE IS YOUR PLAIN-ENGLISH ENTRY:": PRINT
230 M$ = P$: GOSUB 670
240 W = 1
250  FOR N = 1 TO  LEN (P$)
260 CH$ =  MID$ (P$,N,1)
270  IF CH$ =  CHR$ (32) THEN 290
280 W$(W) = W$(W) + CH$: GOTO 350
290 W = W + 1
300  IF W < 100 THEN 350
310  PRINT : PRINT "SORRY, TOO MANY WORDS."
320  PRINT "ENTER A SHORTER VERSION AS SOON AS"
330  PRINT "WE'RE SET UP AGAIN."
340  FOR T = 0 TO 2500: NEXT T: GOTO 70
350  NEXT N
360  VTAB 21: PRINT "PLEASE WAIT A MOMENT."
370  FOR N = 1 TO W
380  FOR M = 1 TO  LEN (W$(N))
390 CH$ =  MID$ (W$(N),M,1)
400 F$ = ""
410  RESTORE
420  DATA  A,E,I,O,U
```

```
430  FOR X = 1 TO 5
440  READ D$
450  IF CH$ <  > D$ THEN 490
460  IF M = 1 THEN 480
470 F$ =  LEFT$ (W$(N),M - 1)
480 W$(N) =  MID$ (W$(N),M) + F$ + "A": GOTO 500
490  NEXT X,M
500  NEXT N
510 PO$ = ""
520  FOR N = 1 TO W
530 PO$ = PO$ + W$(N) +  CHR$ (32)
540  NEXT N
550  VTAB 21: PRINT "OK, STRIKE ANY KEY TO SEE THE PIG-"
560  PRINT "LATIN VERSION ...";
570  GET K$
580  HOME : PRINT H$
590  PRINT "PIG-LATIN VERSION:": PRINT
600 M$ = PO$: GOSUB 670
610  FOR N = 1 TO 100:W$(N) = "": NEXT N
620  VTAB 21: PRINT "WANT TO DO ANOTHER TRANSLATION (Y/N)?";
630  GET K$
640  IF K$ = "Y" THEN 70
650  IF K$ = "N" THEN  HOME : END
660  GOTO 630
670  FOR N = 1 TO  LEN (M$)
680 CH$ =  MID$ (M$,N,1)
690  PRINT CH$;
700  IF  POS (X) > 32 AND CH$ =  CHR$ (32) THEN  PRINT
710  NEXT N: PRINT
720  RETURN
```

Program 15 SINGING COMPUTER

"Ah, [it is] music to mine ears."

—Beethoven

```
10  REM  ** SINGING COMPUTER **
20  REM
30  FOR N = 1 TO 12:M$ = M$ +  CHR$ (32): NEXT N
40 M$ = M$ + "SINGING COMPUTER" +  CHR$ (13)
50  FOR N = 1 TO 40:M$ = M$ + "#": NEXT N
60  TEXT : HOME : PRINT M$
70  GOSUB 210
80  VTAB 22: PRINT "STRIKE ANY KEY TO STOP THE MUSIC ...";
90  HTAB 1: VTAB 6
100 R = 8 *  RND (1) + 1
110  POKE 6,R
120  POKE 7,40 *  RND (1) + 20
130  IF R > 6 THEN  PRINT "DAH.": CALL  - 868: GOTO 160
140  IF R > 4 THEN  PRINT "LA-";: GOTO 150
150  PRINT "DE-";
160  CALL 768
170  IF  PEEK (37) > 19 THEN  HTAB 1: VTAB 6
180 K =  PEEK ( - 16384): POKE  - 16368,0
190  IF K > 127 THEN  HOME : END
200  GOTO 100
210  DATA 164,6,162,4,165,7,32,168,252,173
220  DATA 48,192,202,208,245,136
230  DATA 208,240,96
240  FOR A = 0 TO 18
250  READ D: POKE 768 + A,D
260  NEXT A
270  RETURN
```

Program 16 MUSICAL KEYBOARD

"Play it again, Sam."

—Attributed to the film, *Casablanca*

```
10  REM  ** MUSICAL KEYBOARD **
20  REM
30  FOR N = 1 TO 12:M$ = M$ +  CHR$ (32): NEXT N
40 M$ = M$ + "MUSICAL KEYBOARD" +  CHR$ (13)
50  FOR N = 1 TO 40:M$ = M$ + "#": NEXT N
60  GOSUB 190
70  POKE 6,8
80  TEXT : HOME : PRINT M$
90  PRINT : PRINT "TICKLE THE KEYS ..."
100  VTAB 21: PRINT "TYPE * TO DO SOMETHING ELSE ..."
110  VTAB 8
120  GET K$: IF K$ = "*" THEN  HOME : END
130  IF  ASC (K$) < 33 THEN 120
140  PRINT  CHR$ (32);
150  POKE 7, ASC (K$) - 32
160  CALL 768
170  IF  PEEK (37) > 19 THEN  VTAB 8
180  GOTO 120
190  DATA 164,6,162,4,165,7,32,168,252,173
200  DATA 48,192,202,208,245,136
210  DATA 208,240,96
220  FOR A = 0 TO 18
230  READ D: POKE 768 + A,D
240  NEXT A
250  RETURN
```

Program 17 CRYPTOGRAM GENERATOR

"Bvo xgzm dt bvo bvdjy"

—Tvzpotxozso

If you are a cryptogram puzzle fan, you will no longer have to spend money on puzzle books and magazines.

```
10  REM  ** CRYPTOGRAM GENERATOR **
20  REM
30  DIM C(26)
40 P$(1) = "CRYPTOGRAM" +  CHR$ (32)
50 P$(2) = "GENERATOR"
60  FOR K = 1 TO 40:P$(3) = P$(3) + "=": NEXT K
70 P$(3) =  CHR$ (13) + P$(3) +  CHR$ (13)
80  TEXT : HOME : PRINT P$(1);P$(2);P$(3)
90  PRINT : PRINT "NOW GENERATING THE CODE."
100  VTAB 16: PRINT "PLEASE ";
110  FLASH : PRINT "WAIT";: NORMAL
120  PRINT " A MOMENT ..."
130  FOR N = 1 TO 26
140 C(N) =  INT (26 *  RND (1)) + 1
150  IF N = 1 THEN 200
160  FOR X = 1 TO N - 1
170 W =  PEEK ( - 16336)
180  IF C(N) = C(X) THEN 140
190  NEXT X
200  NEXT N
210  CALL  - 198
220  HOME : PRINT P$(1);P$(2);P$(3)
230  PRINT "ENTER THE MESSAGE TO BE ENCODED."
240  PRINT "ENCLOSE IT IN QUOTES AND USE NO MORE"
250  PRINT "THAN 160 CHARACTERS (ABOUT 4 FULL"
260  PRINT "LINES).": PRINT
270  INPUT PLAIN$
280 L =  LEN (PLAIN$)
290  IF L < 1 THEN 220
300  IF L <  = 160 THEN 330
310  PRINT : PRINT "TOO LONG. TRY AGAIN ...": PRINT
320  GOTO 270
330  HOME : PRINT P$(1);P$(3)
340 PUZZLE$ = ""
350  FOR N = 1 TO L
360 CHAR =  ASC ( MID$ (PLAIN$,N,1))
370  IF CHAR < 65 OR CHAR > 90 THEN 390
380 CHAR = C(CHAR - 64) + 64
390 PUZZLE$ = PUZZLE$ +  CHR$ (CHAR)
400  NEXT N
410  PRINT PUZZLE$
420  VTAB 21: PRINT "STRIKE ANY KEY TO SEE THE ANSWER ...";
430  GET K$
440  HOME : PRINT P$(1);P$(3)
```

```
450  PRINT PUZZLE$: PRINT : PRINT : PRINT PLAIN$
460  VTAB 21: PRINT "DO YOU WANT TO DO ANOTHER CRYPTOGRAM"
470  PRINT "(Y/N)?";
480  GET K$
490  IF K$ = "Y" THEN 80
500  IF K$ = "N" THEN  END
510  GOTO 480
```

Program 18 WORLD BANK UPDATE

1723-44458-200010

—(Paul's Swiss bank account number)

```
10  REM  ** WORLD BANK UPDATE **
20  REM
30  FOR K = 1 TO 10:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "MONETARY CONVERSION" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "$": NEXT K
60  FOR N = 1 TO 6: READ C$(N): NEXT N
70  TEXT : HOME : PRINT M$
80  PRINT "THE WORLD'S MONETARY PICTURE IS OFTEN"
90  PRINT "UNSTABLE AGAINST THE AMERICAN DOLLAR."
100  PRINT : PRINT "THIS PROGRAM HELPS YOU KEEP TRACK OF"
110  PRINT "THE SITUATION AT 30-SECOND INTERVALS."
120  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
130  GET K$
140  HOME : PRINT M$
150  PRINT "ENTER THE CURRENT HOUR (1-12) ";
160  INPUT "";CH:CH =  INT (CH)
170  IF CH > 0 AND CH <  = 12 THEN 190
180  PRINT "TRY AGAIN ...";: GOTO 160
190  PRINT : PRINT "ENTER THE CURRENT MINUTE (0-59) ";
200  INPUT "";CM:CM =  INT (CM)
210  IF CM >  = 0 AND CM <  = 59 THEN 350
220  PRINT "TRY AGAIN ...";: GOTO 200
230  HOME : PRINT M$
240  VTAB 6
250  FOR N = 1 TO 6
260 D$ =  LEFT$ ( STR$ (4 *  RND (1) + 1),4) +  CHR$ (32)
270  PRINT "$1 U.S.= "D$;C$(N)
280  PRINT : NEXT N
290  HTAB 1: VTAB 21
300  PRINT "STRIKE ANY KEY TO CLOSE FOR THE DAY ..."
310  RETURN
320  DATA  AUSTRALIAN DOLLARS,BRAZILIAN CRUZEIROS
330  DATA  CHINESE YUAN,FRENCH FRANCS
340  DATA   DEUTSCHE MARKS,BRITISH POUNDS
350  FOR HR = CH TO 12
360  FOR MN = CM TO 59
370  FOR SC = 0 TO 59
380  IF SC = 0 OR SC = 30 THEN  GOSUB 230
390 HR$ = "0" +  STR$ (HR)
400  IF  LEN (HR$) > 2 THEN HR$ =  RIGHT$ (HR$,2)
410 MN$ = "0" +  STR$ (MN)
420  IF  LEN (MN$) > 2 THEN MN$ =  RIGHT$ (MN$,2)
430 SC$ = "0" +  STR$ (SC)
440  IF  LEN (SC$) > 2 THEN SC$ =  RIGHT$ (SC$,2)
450 T$ = HR$ + ":" + MN$ + ":" + SC$
460  HTAB 1: VTAB 4
470  INVERSE : PRINT T$: NORMAL
480  FOR T = 0 TO 30
```

```
490 K =  PEEK ( - 16384): POKE  - 16368,0
500  IF K > 127 THEN  VTAB 22: END
510  NEXT T
520  NEXT SC,MN
530 CM = 0: NEXT HR
540 CH = 1: GOTO 350
```

Program 19 SPOONERISMS

Customer: Give me a cup of tea and a muttered buffin.
Waitress: You mean a buffered muttin.
Customer: No, I mean a muffered buttin.
Waitress: Why not settle for tea and doughnuts?

—Overheard in truck stop near Virginia Beach

```
10  REM  ** SPOONERISMS **
20  REM
30  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "SPOONERISMS" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "HERE IS A SPOONERISM:": PRINT
80  PRINT  TAB( 5)"BUTTERED TOAST"
90  PRINT  TAB( 9)"IS"
100  PRINT  TAB( 5)"TUTTERED BOAST"
110  VTAB 21: PRINT "STRIKE ANY KEY TO DO SOME SPOONER-"
120  PRINT "ISMS OF YOUR OWN...";
130  GET K$
140  HOME : PRINT M$
150  PRINT "ENTER A 2-WORD PHRASE:": PRINT
160  INPUT P$
170  IF  LEN (P$) > 1 THEN 190
180  PRINT : GOTO 150
190 X$ = P$: GOSUB 420
200 G$ =  RIGHT$ (X$,LP -  LEN (Y$))
210 F$ = Y$
220 LP =  LEN (G$)
230  FOR N = 1 TO LP
240 CH$ =  MID$ (G$,N,1)
250  IF CH$ =  CHR$ (32) THEN 280
260  NEXT N
270  PRINT : PRINT "NOT ENOUGH WORDS. TRY AGAIN.": GOTO 150
280 H$ =  RIGHT$ (G$,LP - N)
290 G$ =  LEFT$ (G$,N)
300 X$ = H$: GOSUB 420
310 I$ =  RIGHT$ (X$,LP -  LEN (Y$))
320 L$ = Y$
330  HOME : PRINT M$: PRINT
340  PRINT P$: PRINT : PRINT "IS": PRINT
350  PRINT L$ + G$ +  CHR$ (32) + F$ + I$
360  VTAB 21: PRINT "WANT TO DO ANOTHER ONE (Y/N)?";
370  GET K$: IF K$ = "Y" THEN 140
380  IF K$ = "N" THEN  HOME : END
390  GOTO 370
410  DATA  A,E,I,O,U
420 LP =  LEN (X$)
430 Y$ = ""
440  FOR N = 1 TO LP
450 CH$ =  MID$ (X$,N,1)
```

```
460  RESTORE
470  FOR X = 1 TO 5: READ D$
480  IF D$ = CH$ THEN  RETURN
490  NEXT X
500 Y$ = Y$ + CH$
510  NEXT N
520  RETURN
```

Program 20 TYPING HELPER

"The man who makes no mistakes does not usually make anything."
—Bishop W.C. Magee

If you experience any difficulty with the use of this program, you might do well to consult the Cussing Program.

```
10  REM  ** TYPING HELPER **
20  HTAB 1: VTAB 21
30  FOR N = 1 TO 14:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 1 TO 40:Y$ = Y$ + "#": NEXT N
50 M$ = X$ + "TYPING HELPER" +  CHR$ (13) + Y$
60  TEXT : HOME : PRINT M$
70 E = 0
80  PRINT "TYPE A SENTENCE OF YOUR CHOICE. DO NOT"
90  PRINT "STRIKE THE RETURN KEY UNTIL YOU ARE"
100  PRINT "DONE."
110  PRINT Y$
120  VTAB 8
130  GOTO 190
140  GET K$
150  IF K$ =  CHR$ (13) THEN 270
160  IF  ASC (K$) < 64 OR  INT (6 *  RND (1)) <  > 0 THEN
170 E = E + 1
180 K$ =  CHR$ (32 *  RND (1) + 64)
190 CH =  PEEK (36):CV =  PEEK (37)
200  HTAB 1: VTAB 21
210  INVERSE : PRINT "ERRORS: "E
220  NORMAL : HTAB CH + 1: VTAB CV + 1
230  CALL  - 198
240  IF  PEEK (37) > 18 THEN  HTAB 1: VTAB 10
250  PRINT K$;
260  GOTO 140
270  HTAB 1: VTAB 23
280  PRINT "WANT TO TRY DOING BETTER (Y/N)?";
290  GET S$
300  IF S$ = "N" THEN  END
310  IF S$ = "Y" THEN 60
320  GOTO 290
```

Program 21 LETTER SCRAMBLER

Q: What four-letter word, when printed in capitals, reads the same forward, backward and upside down?
A: NOON

```
10  REM  ** LETTER SCRAMBLER **
20  REM
30  FOR N = 1 TO 12:X$ = X$ +  CHR$ (32)
40  FOR N = 1 TO 40:Y$ = Y$ + "=": NEXT N
50 M$ = X$ + "LETTER SCRAMBLER" +  CHR$ (13) + Y$
60  TEXT : HOME : PRINT M$
70  PRINT "THIS PROGRAM ALLOWS YOU TO ENTER A WORD"
80  PRINT "OR PHRASE OF 16 CHARACTERS OR LESS. IT"
90  PRINT "THEN SCRAMBLES THE CHARACTERS FOR YOU."
100  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
110  GET K$
120  DIM CH$(17),C(17)
130  HOME : PRINT M$
140  PRINT "ENTER A WORD OR PHRASE OF 16 CHARACTERS"
150  PRINT "OR LESS. ENCLOSE YOUR ENTRY IN QUOTES"
160  PRINT "IF YOU MUST USE A COMMA OR APOSTROPHE."
170  PRINT : INPUT FW$
180 L =  LEN (FW$)
190  IF L > 0 THEN 220
200  PRINT "PLEASE ENTER SOMETHING."
210  GOTO 170
220  IF L < 17 THEN 240
230  PRINT : PRINT "TOO MANY CHARACTERS. TRY AGAIN.": GOTO 170
240  VTAB 16: CALL  - 958
250  VTAB 21: PRINT "PLEASE WAIT ..."
260  FOR N = 1 TO L
270 CH$(N) =  MID$ (FW$,N,1)
280 C(N) =  INT (L *  RND (1)) + 1
290  IF N = 1 THEN 330
300  FOR X = 1 TO N - 1
310  IF C(N) = C(X) THEN 280
320  NEXT X
330  NEXT N
340 SW$ = ""
350  FOR N = 1 TO L
360 SW$ = SW$ + CH$(C(N))
370  NEXT N
380  HOME : PRINT M$
390  PRINT "ORIGINAL VERSION:"
400  PRINT : PRINT  TAB( 5)FW$
410  PRINT : PRINT "SCRAMBLED VERSION:"
420  PRINT : PRINT  TAB( 5)SW$
430  PRINT : PRINT Y$
440  VTAB 18
450  PRINT "SELECT ONE:": PRINT
460  PRINT  TAB( 5)"1 - SCRAMBLE THE SAME WORD AGAIN.
470  PRINT  TAB( 5)"2 - SCRAMBLE A NEW WORD.
```

```
480  PRINT  TAB( 5)"3 - END THE PROGRAM.
490  GET K$
500  IF K$ < "1" OR K$ > "3" THEN 490
510  ON  VAL (K$) GOTO 240,130
520  END
```

Program 22 LETTER-SCRAMBLE GAME

"Dmoph glubble muff pssht wumph!"

—Demosthenes

```
10  REM  ** LETTER-SCRAMBLE GAME **
20  REM
30  DIM CH$(16),C(16)
40  FOR K = 1 TO 10:M$ = M$ +  CHR$ (32): NEXT K
50 M$ = M$ + "LETTER-SCRAMBLE GAME" +  CHR$ (13)
60  FOR K = 1 TO 40:M$ = M$ + "-": NEXT K
70  TEXT : HOME : PRINT M$
80  PRINT "THIS IS A WORD-GUESSING GAME FOR TWO"
90  PRINT "PLAYERS.": PRINT
100  FOR N = 1 TO 2
110  PRINT
120  PRINT "PLAYER "N", ENTER YOUR FIRST NAME:": PRINT
130  HTAB 1: VTAB 4 * N + 6: CALL  - 868
140  INPUT "";N$(N)
150  CALL  - 958
160  IF  LEN (N$(N)) < 1 THEN 130
170  IF  LEN (N$(N)) < 12 THEN 190
180  PRINT "AWW, GET SERIOUS. TRY AGAIN ...";: GOTO 130
190  NEXT N
200 PH = 1
210  HOME : PRINT M$
220 EP$ = N$(1):GP$ = N$(2)
230  IF PH =  - 1 THEN EP$ = N$(2):GP$ = N$(1)
240  PRINT EP$", MAKE YOUR ENTRY:": PRINT
250  PRINT "ENTER A WORD OR SHORT PHRASE UP TO 16"
260  PRINT "CHARACTERS LONG. ENCLOSE IT IN QUOTES"
270  PRINT "IF YOU USE A COMMA OR APOSTROPHE, AND"
280  PRINT "MAKE SURE THAT YOUR OPPONENT ISN'T"
290  PRINT "LOOKING OVER YOUR SHOULDER."
300  PRINT : INPUT FW$
310 L =  LEN (FW$)
320  IF L > 1 THEN 340
330  PRINT "YOU MUST ENTER SOMETHING ...": GOTO 300
340  IF L < 17 THEN 370
350  PRINT "TOO MANY CHARACTERS. TRY AGAIN ..."
360  GOTO 300
370  VTAB 21: PRINT "PLEASE WAIT ..."
380 SW$ = ""
390  FOR N = 1 TO L
400 CH$(N) =  MID$ (FW$,N,1)
410 C(N) =  INT (L *  RND (1)) + 1
420  IF N = 1 THEN 460
430  FOR X = 1 TO N - 1
440  IF C(N) = C(X) THEN 410
450  NEXT X
460  NEXT N
470  FOR N = 1 TO L
480 SW$ = SW$ + CH$(C(N))
```

```
490  NEXT N
500  HOME : PRINT M$
510  PRINT "OK,"GP$":": PRINT
520  PRINT "SEE IF YOU CAN GUESS THIS WORD:"
530  HTAB (40 - L) / 2: VTAB 8
540  INVERSE : PRINT SW$: NORMAL
550  PRINT : PRINT "ENTER YOUR GUESS WHEN YOU THINK YOU'VE"
560  PRINT "FIGURED IT OUT ..."
570  PRINT : INPUT GW$
580  IF  LEN (GW$) > 1 THEN 600
590  PRINT "YOU MUST ENTER SOMETHING.  TRY AGAIN ...": GOTO 570
600  HOME : PRINT M$
610  PRINT : PRINT EP$"'S WORD WAS:"
620  PRINT : PRINT  TAB( 5)FW$
630  PRINT : PRINT GP$"'S GUESS IS:"
640  PRINT : PRINT  TAB( 5)GW$
650  PRINT
660  IF GW$ = FW$ THEN 750
670  PRINT : PRINT "SORRY ABOUT THAT, "GP$"."
680  PRINT EP$" OUTSMARTED YOU."
690  PRINT : PRINT "YOU HAVE TO GUESS AGAIN."
700  GOSUB 830
710  GET K$
720  IF K$ = "X" THEN  HOME : END
730  IF K$ =  CHR$ (32) THEN 210
740  GOTO 710
750  PRINT : PRINT "THAT'S GOOD, "GP$"."
760  PRINT : PRINT "NOW IT IS YOUR TURN TO SEE IF YOU CAN"
770  PRINT "OUTSMART "EP$"."
780  GOSUB 830
790  GET K$
800  IF K$ =  CHR$ (32) THEN PH = PH *  - 1: GOTO 210
810  IF K$ = "X" THEN  HOME : END
820  GOTO 790
830  VTAB 21: PRINT "STRIKE THE SPACE BAR TO CONTINUE"
840  PRINT "(OR THE X KEY TO END THE GAME)...";
850  RETURN
```

Program 23 WORD-SCRAMBLE GAME

"No I don't. I don't no. Don't I no."

—I.M. Reatching

```
10  REM  ** WORD-SCRAMBLE GAME **
20  REM
30  DIM W$(51),C(51)
40  FOR K = 1 TO 11:M$ = M$ +  CHR$ (32): NEXT K
50 M$ = M$ + "WORD-SCRAMBLE GAME" +  CHR$ (13)
60  FOR K = 1 TO 40:M$ = M$ + "-": NEXT K
70  TEXT : HOME : PRINT M$
80  PRINT "THIS IS A WORD-SCRAMBLING GUESSING GAME"
90  PRINT "FOR TWO PLAYERS.": PRINT
100  FOR N = 1 TO 2
110  PRINT
120  PRINT "PLAYER "N", ENTER YOUR FIRST NAME:": PRINT
130  HTAB 1: VTAB 4 * N + 6: CALL  - 868
140  INPUT "";N$(N)
150  CALL  - 958
160  IF  LEN (N$(N)) < 1 THEN 130
170  IF  LEN (N$(N)) < 12 THEN 190
180  PRINT "AWW, GET SERIOUS. TRY AGAIN ...";: GOTO 130
190  NEXT N
200 PH = 1
210  HOME : PRINT M$
220  FOR N = 1 TO W:W$(N) = "": NEXT N
230 EP$ = N$(1):GP$ = N$(2)
240  IF PH =  - 1 THEN EP$ = N$(2):GP$ = N$(1)
250  PRINT EP$":": PRINT
260  PRINT "ENTER A PHRASE OR SENTENCE OF 50 WORDS"
270  PRINT "OR LESS. USE NO PUNCTUATION, DO NOT"
280  PRINT "STRIKE THE RETURN KEY UNTIL YOU ARE"
290  PRINT "DONE, AND MAKE SURE THAT YOUR OPPONENT"
300  PRINT "ISN'T LOOKING OVER YOUR SHOULDER."
310  PRINT
320  INPUT FW$
330 L =  LEN (FW$)
340  IF L < 1 THEN 320
350 W = 1
360  FOR N = 1 TO  LEN (FW$)
370 CH$ =  MID$ (FW$,N,1)
380  IF CH$ =  CHR$ (32) THEN 400
390 W$(W) = W$(W) + CH$: GOTO 460
400 W = W + 1
410  IF W < 50 THEN 460
420  PRINT : PRINT "SORRY, TOO MANY WORDS."
430  PRINT "ENTER A SHORTER VERSION AS SOON AS"
440  PRINT "WE'RE SET UP AGAIN."
450  FOR T = 0 TO 2500: NEXT T: GOTO 390
460  NEXT N
470  VTAB 21: PRINT "ARE YOU SATISFIED (Y/N)?"
480  GET K$
```

```
490  IF K$ = "Y" THEN 520
500  IF K$ = "N" THEN 210
510  GOTO 480
520  HOME : PRINT M$
530  VTAB 21: PRINT "PLEASE WAIT ..."
540  FOR N = 1 TO W
550 C(N) =  INT (W *  RND (1)) + 1
560  IF N = 1 THEN 600
570  FOR X = 1 TO N - 1
580  IF C(N) = C(X) THEN 550
590  NEXT X
600  NEXT N
610 SW$ = ""
620  FOR N = 1 TO W
630 SW$ = SW$ + W$(C(N)) +  CHR$ (32)
640  NEXT N
650 SW$ =  LEFT$ (SW$, LEN (SW$) - 1)
660  HOME : PRINT M$
670  PRINT "OK,"GP$":": PRINT
680  PRINT "SEE IF YOU CAN UNSCRAMBLE THIS PHRASE:"
690  PRINT
700 H$ = SW$: GOSUB 1030
710  HTAB 1: VTAB 16
720  PRINT "ENTER YOUR INTERPRETATION:": PRINT
730  INPUT "";WG$
740  HOME : PRINT M$
750  PRINT : PRINT EP$"'S PHRASE WAS:"
760  PRINT :H$ = FW$: GOSUB 1030
770  PRINT : PRINT GP$"'S GUESS IS:"
780  PRINT :H$ = WG$: GOSUB 1030
790  PRINT
800  GOSUB 1000
810  GET K$
820  HOME : PRINT M$
830  IF WG$ = FW$ THEN 920
840  PRINT : PRINT "SORRY ABOUT THAT, "GP$"."
850  PRINT EP$" OUTSMARTED YOU."
860  PRINT : PRINT "YOU HAVE TO GUESS AGAIN."
870  GOSUB 1000
880  GET K$
890  IF K$ = "X" THEN  HOME : END
900  IF K$ =  CHR$ (32) THEN 210
910  GOTO 880
920  PRINT : PRINT "THAT'S GOOD, "GP$"."
930  PRINT : PRINT "NOW IT IS YOUR TURN TO SEE IF YOU CAN"
940  PRINT "OUTSMART "EP$"."
950  GOSUB 1000
960  GET K$
970  IF K$ =  CHR$ (32) THEN PH = PH *  - 1: GOTO 210
980  IF K$ = "X" THEN  HOME : END
990  GOTO 960
1000  VTAB 21: PRINT "STRIKE THE SPACE BAR TO CONTINUE"
1010  PRINT "(OR THE X KEY TO END THE GAME)...";
1020  RETURN
1030  INVERSE : FOR N = 1 TO  LEN (H$)
1040 CH$ =  MID$ (H$,N,1)
```

```
1050  PRINT CH$;
1060  IF  POS (X) > 32 AND CH$ =  CHR$ (32) THEN  PRINT
1070  NEXT N: PRINT
1080  NORMAL
1090  RETURN
```

Program 24 BREAK TIME

"A break in time is worth nine."

—Anonymous

```
10  REM  ** BREAK TIME **
20  REM
30  FOR K = 1 TO 15:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "BREAK TIME" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "#": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "COMPUTERS NEED A BREAK NOW AND THEN,"
80  PRINT "TOO. THIS PROGRAM ENHANCES THAT FEATURE"
90  PRINT "BY GIVING YOUR COMPUTER A SHORT REST --"
100  PRINT "IT MIGHT EVEN FALL ASLEEP."
110  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
120  GET K$
130  HOME : PRINT M$
140  HTAB 1: VTAB 4
150  FOR N = 0 TO 50 *  RND (1) + 20
160  PRINT "I'M WORKING - ";
170  FOR T = 0 TO 200: NEXT T
180  IF  PEEK (37) < 22 THEN 200
190  HOME : PRINT M$: HTAB 1: VTAB 4
200  NEXT N
210  FOR N = 1 TO 5: CALL  - 198: NEXT N
220  FLASH : PRINT "NAP ATTACK!": NORMAL
230  FOR T = 1 TO 2000: NEXT T
240  FOR N = 1 TO 15 *  RND (1) + 10
250  IF  PEEK (37) > 20 THEN  HTAB 1: VTAB 4
260  PRINT "Z-Z-Z-";: CALL  - 868
270  FOR T = 1 TO 100
280 X =  PEEK ( - 16336)
290  NEXT T
300  FOR T = 1 TO 500: NEXT T
310  NEXT N
320  FOR N = 1 TO 5: CALL  - 198: NEXT N
330  HOME : PRINT M$
340  FLASH : PRINT "I'M AWAKE": NORMAL
350  PRINT : PRINT "PUT ME TO WORK ..."
360  END
```

Program 25 ESP

"Dee-dah-dee-ding/ dee-dah-dee-ding . . ."

—Theme tune of TV's *Twilight Zone*

```
10  REM   ** ESP **
20  REM
30  FOR N = 1 TO 18:X$ = X$ +  CHR$ (32): NEXT N
40 Y$ =  CHR$ (13)
50  FOR N = 1 TO 40:Y$ = Y$ +  CHR$ (63): NEXT N
60 M$ = X$ + "ESP" +  CHR$ (13) + Y$
70  TEXT : HOME : PRINT M$: PRINT
80  PRINT "THIS PROGRAM DEMONSTRATES THE FACT THAT"
90  PRINT "COMPUTERS DO, INDEED, POSSESS A FORM OF"
100  PRINT "EXTRA-SENSORY PERCEPTION (ESP)."
110  PRINT : PRINT "THE DEMONSTRATION WORKS BEST IF YOU USE"
120  PRINT "AN ELECTRONIC CALCULATOR, BUT THE COM-"
130  PRINT "PUTER CAN READ YOUR BRAIN WAVES WHEN-"
140  PRINT "EVER THE WEATHER IS JUST RIGHT. (SEE"
150  PRINT "THE WEATHER FORECASTING PROGRAM.)"
160  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
170  GET K$
180  HOME : PRINT M$
190  FLASH : PRINT "THINK";: NORMAL
200  PRINT " OF ANY NUMBER BETWEEN 1 AND 100."
210  GOSUB 520
220 M =  INT (10 *  RND (1) + 1)
230  PRINT "MULTIPLY YOUR ORIGINAL NUMBER BY "M"."
240  PRINT : PRINT : INVERSE
250  PRINT "BUT DON'T TELL YOUR COMPUTER ANYTHING!!"
260  NORMAL : GOSUB 520
270 A =  INT (5 *  RND (1)) * M
280  PRINT "NOW ADD "A" TO THE PREVIOUS RESULT."
290  PRINT : PRINT : INVERSE
300  PRINT "BUT DON'T EVEN WHISPER THE RESULT.": NORMAL
310  PRINT : PRINT "HINT: THINK CONFUSING THOUGHTS."
320  GOSUB 520
330  PRINT "DIVIDE THE LAST RESULT BY "M"."
340  PRINT : PRINT "AGAIN, DON'T TELL THE COMPUTER ANYTHING!"
350  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
360  GET K$: GOSUB 550: HOME : PRINT M$
370  PRINT "FINALLY, SUBTRACT YOUR ORIGINAL NUM-"
380  PRINT "BER FROM THE LAST RESULT."
390  PRINT : PRINT "THINK CONFUSING THOUGHTS."
400  GOSUB 520
410  FOR N = 1 TO 4: CALL  - 198: NEXT N
420  SPEED= 10: PRINT "THE ANSWER IS: ";
430  SPEED= 255
440  FOR N = 1 TO 4: CALL  - 198: NEXT N
450 L = A / M: PRINT L
460  VTAB 21
470  PRINT "DO YOU WANT TO CONTINUE WITH THIS"
480  PRINT "FOOLISHNESS (Y/N)?";
```

```
490  GET K$
500  IF K$ = "Y" THEN 180
510  GOSUB 550: TEXT : HOME : END
520  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
530  GET K$: GOSUB 550: HOME : PRINT M$
540  RETURN
550  POKE  - 16304,0: POKE  - 16302,0
560  FOR N = 1 TO 20
570  POKE  - 16297,0
580  FOR T = 0 TO 10
590 X =  PEEK ( - 16336)
600  NEXT T
610  POKE  - 16298,0
620  NEXT N
630  TEXT : RETURN
```

Program 26 WORD UNSCRAMBLER

"What really counts is what you learn after you know it all."

—Uncertain

Are you tired of being defeated by word-scramble puzzles? This program might not give you the exact solutions, but it sure provides some great hints.

```
10  REM  ** WORD UNSCRAMBLER **
20  REM
30  FOR N = 1 TO 40:Y$ = Y$ + "-": NEXT N
40  TEXT : HOME : PRINT "WORD UNSCRAMBLER"
50  PRINT Y$
60  PRINT "ENTER A WORD THAT IS TO BE UNSCRAMBLED"
70  PRINT "(NO MORE THAN 16 LETTERS):"
80  PRINT : INPUT "";SW$
90 L =  LEN (SW$)
100  IF L < 1 THEN 80
110  IF L <  = 16 THEN 130
120  PRINT "THE WORD IS TOO LONG. TRY AGAIN ...": GOTO
130 K = 1
140  FOR N = 1 TO L
150 K = K * N
160  NEXT N
170  HOME
180  INVERSE : PRINT SW$: NORMAL
190  PRINT
200  PRINT "UP TO "K" COMBINATIONS"
210  PRINT Y$
220  FOR XL = 1 TO 16
230  FOR N = 1 TO L
240 C(N) =  INT (L *  RND (1)) + 1
250  IF N = 1 THEN 290
260  FOR X = 1 TO N - 1
270  IF C(N) = C(X) THEN 240
280  NEXT X
290  PRINT  MID$ (SW$,C(N),1);
300  NEXT N
310  PRINT
320  NEXT XL
330  PRINT : PRINT "STRIKE THE SPACE BAR TO SEE MORE"
340  PRINT "(OR THE X KEY TO END)...";
350  GET K$
360  IF K$ =  CHR$ (32) THEN 170
370  IF K$ = "X" THEN  END
380  GOTO 350
```

Program 27 MISSING LETTERS

"Watson, there is perhaps more than one letter missing."

—Sherlock Holmes

```
10  REM  ** MISSING LETTERS **
20  REM
30  FOR K = 1 TO 12:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "MISSING LETTERS" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "-": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "THIS IS A WORD GAME FOR TWO PLAYERS."
80  PRINT
90  FOR N = 1 TO 2
100  PRINT
110  PRINT "PLAYER "N", ENTER YOUR FIRST NAME:": PRINT
120  HTAB 1: VTAB 4 * N + 6: CALL  - 868
130  INPUT "";N$(N)
140  CALL  - 958
150  IF  LEN (N$(N)) < 1 THEN 120
160  IF  LEN (N$(N)) < 12 THEN 180
170  PRINT "AWW, GET SERIOUS. TRY AGAIN ...";: GOTO 120
180  NEXT N
190 PH = 1
200  HOME : PRINT M$
210 EP$ = N$(1):GP$ = N$(2)
220  IF PH =  - 1 THEN EP$ = N$(2):GP$ = N$(1)
230  PRINT EP$", MAKE YOUR ENTRY:": PRINT
240  PRINT "ENTER A SHORT PHRASE OR SENTENCE UP TO"
250  PRINT "30 CHARACTERS LONG (CLOSE TO ONE FULL"
260  PRINT "LINE ON THE SCREEN). AVOID PUNCTUATION,"
270  PRINT "AND MAKE SURE THAT YOUR OPPONENT ISN'T"
280  PRINT "LOOKING OVER YOUR SHOULDER."
290  PRINT : INPUT FW$
300 L =  LEN (FW$)
310  IF L > 1 THEN 330
320  PRINT "YOU MUST ENTER SOMETHING ...": GOTO 290
330  IF L <  = 30 THEN 360
340  PRINT "TOO MANY CHARACTERS. TRY AGAIN ..."
350  GOTO 290
360 SW$ = ""
370  FOR N = 1 TO L
380 CH$ =  MID$ (FW$,N,1)
390  IF CH$ =  CHR$ (32) THEN CH$ = "*": GOTO 410
400  IF  INT (N / 2) = N / 2 THEN CH$ = "_"
410 SW$ = SW$ + CH$
420  NEXT N
430  HOME : PRINT M$
440  PRINT "OK,"GP$":": PRINT
450  PRINT "THE FOLLOWING MESSAGE SHOWS THE LETTERS"
460  PRINT "IN THEIR CORRECT POSITIONS. THE BLANKS"
470  PRINT "INDICATE MISSING LETTERS AND THE"
480  PRINT "ASTERISK(S) INDICATE SPACES BETWEEN"
```

```
490  PRINT "WORDS."
500  HTAB (40 - L) / 2: VTAB 12
510  PRINT SW$: PRINT
520  PRINT : PRINT "ENTER YOUR GUESS WHEN YOU THINK YOU'VE"
530  PRINT "FIGURED IT OUT ..."
540  PRINT : INPUT GW$
550  IF  LEN (GW$) > 1 THEN 570
560  PRINT "YOU MUST ENTER SOMETHING. TRY AGAIN ...": GOTO 540
570  HOME : PRINT M$
580  PRINT : PRINT EP$"'S WORD WAS:"
590  PRINT : PRINT  TAB( 5)FW$
600  PRINT : PRINT GP$"'S GUESS IS:"
610  PRINT : PRINT  TAB( 5)GW$
620  PRINT
630  IF GW$ = FW$ THEN 720
640  PRINT : PRINT "SORRY ABOUT THAT, "GP$"."
650  PRINT EP$" OUTSMARTED YOU."
660  PRINT : PRINT "YOU HAVE TO GUESS AGAIN."
670  GOSUB 800
680  GET K$
690  IF K$ = "X" THEN  HOME : END
700  IF K$ =  CHR$ (32) THEN 200
710  GOTO 680
720  PRINT : PRINT "THAT'S GOOD, "GP$"."
730  PRINT : PRINT "NOW IT IS YOUR TURN TO SEE IF YOU CAN"
740  PRINT "OUTSMART "EP$"."
750  GOSUB 800
760  GET K$
770  IF K$ =  CHR$ (32) THEN PH = PH *  - 1: GOTO 200
780  IF K$ = "X" THEN  HOME : END
790  GOTO 760
800  VTAB 21: PRINT "STRIKE THE SPACE BAR TO CONTINUE"
810  PRINT "(OR THE X KEY TO END THE GAME)...";
820  RETURN
```

Program 28 FLASHING-LETTERS GAME

"Methinks there's another puskle comink"

—Popeye

```
10  REM  ** FLASHING-LETTERS GAME **
20  REM
30  FOR K = 1 TO 9:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "FLASHING-LETTERS GAME" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "-": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "THIS IS A WORD-GUESSING GAME FOR TWO"
80  PRINT "PLAYERS.": PRINT
90  FOR N = 1 TO 2
100  PRINT
110  PRINT "PLAYER "N", ENTER YOUR FIRST NAME:": PRINT
120  HTAB 1: VTAB 4 * N + 6: CALL  - 868
130  INPUT "";N$(N)
140  CALL  - 958
150  IF  LEN (N$(N)) < 1 THEN 120
160  IF  LEN (N$(N)) < 12 THEN 180
170  PRINT "AWW, GET SERIOUS. TRY AGAIN ...";: GOTO 120
180  NEXT N
190 PH = 1
200  HOME : PRINT M$
210 EP$ = N$(1):GP$ = N$(2)
220  IF PH =  - 1 THEN EP$ = N$(2):GP$ = N$(1)
230  PRINT EP$", ENTER A WORD.": PRINT
240  PRINT "USE LESS THAN 20 LETTERS, AND MAKE SURE"
250  PRINT "THAT YOUR OPPONENT ISN'T LOOKING OVER"
260  PRINT "YOUR SHOULDER."
270  PRINT
280  INPUT R$
290 L =  LEN (R$)
300  IF L < 1 THEN 280
310  IF L <  = 20 THEN 330
320  PRINT "TOO LONG. TRY AGAIN ...": GOTO 280
330  HOME : PRINT M$
340  PRINT "OK,"GP$":": PRINT
350  PRINT "SEE IF YOU CAN GUESS THIS WORD:"
360  VTAB 20: PRINT "STRIKE ANY KEY WHEN YOU THINK YOU'VE"
370  PRINT "FIGURED IT OUT ..."
380  FOR K = 1 TO 40:B$ = B$ +  CHR$ (32): NEXT K
390 CH =  INT (40 - L) / 2
400  HTAB 13: VTAB 12: PRINT "FLASHING CLUES"
410  HTAB CH
420  FOR N = 1 TO L: PRINT "=";: NEXT N
430  VTAB 15
440 N =  INT ( RND (1) * L + 1)
450 C$ =  MID$ (R$,N,1)
460 H$ = ""
470  FOR K = 1 TO N:H$ = H$ +  CHR$ (32): NEXT K
480 H$ = H$ + C$
```

```
490  HTAB CH - 1
500  PRINT H$
510  FOR T = 1 TO 80: NEXT T
520  VTAB 15: HTAB CH - 1: PRINT B$
530  FOR T = 1 TO 50: NEXT T
540 KBD =  PEEK ( - 16384)
550  POKE  - 16368,0
560  IF KBD > 127 THEN 580
570  GOTO 430
580  HTAB 1: VTAB 20: PRINT "WHAT DO YOU THINK IT IS?";
590  CALL  - 958: PRINT
600  INPUT "";WG$
610  HOME : PRINT M$
620  PRINT : PRINT EP$"'S WORD WAS:"
630  PRINT : PRINT  TAB( 5)R$
640  PRINT : PRINT GP$"'S GUESS IS:"
650  PRINT : PRINT  TAB( 5)WG$
660  PRINT
670  IF WG$ = R$ THEN 760
680  PRINT : PRINT "SORRY ABOUT THAT, "GP$"."
690  PRINT EP$" OUTSMARTED YOU."
700  PRINT : PRINT "YOU HAVE TO GUESS AGAIN."
710  GOSUB 840
720  GET K$
730  IF K$ =  CHR$ (32) THEN 200
740  IF K$ = "X" THEN  HOME : END
750  GOTO 720
760  PRINT : PRINT "THAT'S GOOD, "GP$"."
770  PRINT : PRINT "NOW IT IS YOUR TURN TO SEE IF YOU CAN"
780  PRINT "OUTSMART "EP$"."
790  GOSUB 840
800  GET K$
810  IF K$ =  CHR$ (32) THEN PH = PH *  - 1: GOTO 200
820  IF K$ = "X" THEN  HOME : END
830  GOTO 800
840  VTAB 21: PRINT "STRIKE THE SPACE BAR TO CONTINUE"
850  PRINT "(OR THE X KEY TO END THE GAME)...";
860  RETURN
```

Program 29 CODE SKILL BUILDER

"Practice makes perfect."

—Uncertain

This program is for real. It is worth the time and effort to load this program if you want to learn the International Morse Code.

```
10  REM  ** CODE SKILL BUILDER **
20  REM
30  GOSUB 670
40  FOR N = 1 TO 11:M$ = M$ +  CHR$ (32): NEXT N
50 M$ = M$ + "MORSE CODE GENERATOR" +  CHR$ (13)
60  FOR N = 1 TO 40:M$ = M$ + "*": NEXT N
70  TEXT : HOME : PRINT M$
80  PRINT "SELECT A TRANSMISSION RATE:"
90  PRINT
100  PRINT  TAB( 5)"1 - SLOW
110  PRINT  TAB( 5)"2 - MEDIUM
120  PRINT  TAB( 5)"3 - FAST
130  PRINT : GET K$
140  IF K$ < "1" OR K$ > "3" THEN 130
150 K =  VAL (K$)
160  IF K = 1 THEN  POKE 771,8
170  IF K = 2 THEN  POKE 771,6
180  IF K = 3 THEN  POKE 771,4
190  HOME : PRINT M$
200 K =  INT (36 *  RND (1)) + 1
210  RESTORE
220  FOR N = 1 TO K: READ D$: NEXT N
230 C$ =  LEFT$ (D$,1)
240  HTAB 1: VTAB 4
250  CALL  - 958: PRINT "LISTEN ..."
260  FOR T = 0 TO 500: NEXT T
270  GOSUB 530
280  HTAB 1: VTAB 4
290  PRINT "WANT TO HEAR IT AGAIN (Y/N)?";
300  CALL  - 958
310  GET K$
320  IF K$ = "Y" THEN 240
330  IF K$ = "N" THEN 350
340  GOTO 310
350  PRINT : PRINT "WHAT WAS THE CHARACTER?";
360  GET K$
370  PRINT K$: PRINT
380  IF K$ <  > C$ THEN 420
390  PRINT "THAT IS CORRECT: "D$
400  GOSUB 530
410  GOTO 430
420  PRINT "THAT IS NOT CORRECT."
430  HTAB 1: VTAB 18
440  PRINT "SELECT ONE:": PRINT
```

```
450  PRINT  TAB( 5)"1 - LISTEN TO THE SAME CHARACTER.
460  PRINT  TAB( 5)"2 - LISTEN TO A NEW CHARACTER.
470  PRINT  TAB( 5)"3 - END THE PROGRAM.
480  GET K$
490  IF K$ = "1" THEN 240
500  IF K$ = "2" THEN 190
510  IF K$ = "3" THEN  HOME : END
520  GOTO 480
530  POKE 7,10
540  FOR X = 2 TO  LEN (D$)
550 CH$ =  MID$ (D$,X,1)
560  IF CH$ = "." THEN  POKE 6,50: CALL 768: GOTO 580
570  POKE 6,150: CALL 768
580  NEXT X
590  RETURN
600  DATA A.-,B-...,C-.-.,D-..,E.,F..-.
610  DATA G--.,H....,I..,J.---,K-.-,L.-..
620  DATA M--,N-.,O---,P.--.,Q--.-,R.-.
630  DATA S...,T-,U..-,V...-,W.--,X-..-
640  DATA  Y-.--,Z--..,1.----,2..---,3...--,4....-
650  DATA  5.....,6-....,7--...,8---..,9----.,0-----
660  DATA  #
670  DATA  164,6,162,8,165,7,32,168,252,173
680  DATA 48,192,202,208,245,136
690  DATA 208,240,96
700  READ D$
710  IF D$ <  > "#" THEN 700
720  FOR A = 0 TO 18
730  READ D: POKE 768 + A,D
740  NEXT A
750  RETURN
```

Program 30 MORSE CODE GENERATOR

"Our world would be a different place if all truck drivers had to pass the code test."
—Anonymous amateur radio operator

```
10  REM  ** MORSE CODE GENERATOR **
20  REM
30  GOSUB 610
40  FOR N = 1 TO 10:M$ = M$ +  CHR$ (32): NEXT N
50 M$ = M$ + "MORSE CODE GENERATOR" +  CHR$ (13)
60  FOR N = 1 TO 40:M$ = M$ + "*": NEXT N
70  TEXT : HOME : PRINT M$
80  PRINT "SELECT A TRANSMISSION RATE:"
90  PRINT
100  PRINT  TAB( 5)"1 - SLOW
110  PRINT  TAB( 5)"2 - MEDIUM
120  PRINT  TAB( 5)"3 - FAST
130  PRINT : GET K$
140  IF K$ < "1" OR K$ > "3" THEN 130
150 K =  VAL (K$)
160  IF K = 1 THEN  POKE 771,8
170  IF K = 2 THEN  POKE 771,6
180  IF K = 3 THEN  POKE 771,4
190  HOME : PRINT M$
200  PRINT "ENTER A SENTENCE THAT IS TO BE ENCODED"
210  PRINT "(UP TO 200 CHARACTERS). ENCLOSE IN"
220  PRINT "QUOTES IF YOU USE A COMMA OR APOSTROPHE."
230  INPUT "";PE$
240 L =  LEN (PE$)
250  IF L < 1 THEN 230
260  IF L < 201 THEN 290
270  PRINT : PRINT "MESSAGE IS TOO LONG. TRY AGAIN."
280  GOTO 230
290  FOR N = 1 TO  LEN (PE$)
300 K$ =  MID$ (PE$,N,1)
310  PRINT K$;
320  IF K$ <  >  CHR$ (32) THEN 340
330  FOR T = 0 TO 100: NEXT T: GOTO 350
340  GOSUB 430
350  NEXT N
360  HTAB 1: VTAB 21
370  PRINT "STRIKE THE SPACE BAR TO ENCODE ANOTHER"
380  PRINT "MESSAGE (OR THE X KEY TO END).";
390  GET K$
400  IF K$ =  CHR$ (32) THEN 70
410  IF K$ = "X" THEN  END
420  GOTO 390
430  RESTORE
440  READ D$: IF D$ = "#" THEN  RETURN
450  IF K$ <  >  LEFT$ (D$,1) THEN 440
460  POKE 7,10
470  FOR X = 2 TO  LEN (D$)
480 CH$ =  MID$ (D$,X,1)
```

```
490  IF CH$ = "." THEN  POKE 6,50: CALL 768: GOTO 510
500  POKE 6,150: CALL 768
510  NEXT X
520  RETURN
530  DATA A.-,B-...,C-.-.,D-..,E.,F..-.
540  DATA G--.,H....,I..,J.---,K-.-,L.-..
550  DATA M--,N-.,O---,P.--.,Q--.-,R.-.
560  DATA S...,T-,U..-,V...-,W.--,X-..-
570  DATA  Y-.--,Z--..,1.----,2..---,3...--,4....-
580  DATA  5.....,6-....,7--...,8---..,9----.,0-----
590  DATA  ..-.-.-,",--..--",?..--..,/-..-.,--...-
600  DATA  #
610  DATA  164,6,162,8,165,7,32,168,252,173
620  DATA 48,192,202,208,245,136
630  DATA 208,240,96
640  READ D$
650  IF D$ <  > "#" THEN 640
660  FOR A = 0 TO 18
670  READ D: POKE 768 + A,D
680  NEXT A
690  RETURN
```

Program 31 WORD-FIND PUZZLE GENERATOR

"Failure is sometimes its own reward; such as seeking a needle in a haystack and finding the farmer's daughter."

—Ancient Midwestern Proverb

Word-find puzzles are quite popular these days. Such puzzles show a rectangular array of seemingly random letters of the alphabet. Hidden within that array, however, are some meaningful words. Some are arranged horizontally, and others vertically.

This program gives you the opportunity to specify eight words of up to eight characters apiece. It then arranges them in the "word-find" array for you.

```
10  REM  ** WORD-FIND PUZZLE GENERATOR **
20  REM
30  DIM N$(8),M$(8,8),T$(16,16),Y$(16,16)
40 M$ = "WORD-FIND PUZZLE GENERATOR" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  FOR C = 1 TO 8: FOR X = 1 TO 8
80 M$(C,X) =  CHR$ (32)
90  NEXT X: NEXT C
100  PRINT "ENTER 8 WORDS OF 8 CHARACTERS OR LESS:"
110  VTAB 8
120  FOR N = 1 TO 8
130  IF  PEEK (37) <  = 21 THEN 150
140  HTAB 1: VTAB 8
150  PRINT "WORD #"N": ";
160  CALL  - 868
170  INPUT "";W$
180 L =  LEN (W$)
190  IF L < 1 THEN 130
200  IF L <  = 8 THEN 230
210  PRINT "TOO LONG. TRY AGAIN ..."
220  GOTO 130
230  IF  RIGHT$ (W$,1) <  >  CHR$ (32) THEN 250
240 L = L - 1:W$ =  LEFT$ (W$,L): GOTO 230
250 N$(N) = W$
260  NEXT N
270  FOR N = 1 TO 8: FOR X = 1 TO  LEN (N$(N))
280 M$(X,N) =  MID$ (N$(N),X,1)
290  NEXT X,N
300  HOME : PRINT M$: PRINT
310  PRINT : PRINT "GENERATING WORD FIND"
320  FOR R = 1 TO 16: FOR C = 1 TO 16
330 T$(R,C) =  CHR$ (32)
340  NEXT C: NEXT R
350 W = 0
360 W = W + 1
370 D =  INT ( RND (1) * 2 + 1)
380  IF D = 2 THEN 510
390 C =  INT ( RND (1) * 16 + 1)
400 R =  INT ( RND (1) * 8 + 9)
```

```
410  FOR CK = R - 8 TO R - 1
420  IF T$(CK,C) <  >  CHR$ (32) THEN 370
430  NEXT CK
440 L = 0
450  FOR CK = R - 8 TO R - 1
460 L = L + 1
470 T$(CK,C) = M$(L,W)
480  NEXT CK
490  IF W < 8 THEN 360
500  GOTO 620
510 R =  INT ( RND (1) * 16 + 1)
520 C =  INT ( RND (1) * 8 + 9)
530  FOR CK = C - 8 TO C - 1
540  IF T$(R,CK) <  >  CHR$ (32) THEN 370
550  NEXT CK
560 L = 0
570  FOR CK = C - 8 TO C - 1
580 L = L + 1
590 T$(R,CK) = M$(L,W)
600  NEXT CK
610  IF W < 8 THEN 360
620  HOME : PRINT M$: PRINT
630  GOSUB 980
640  VTAB 5
650  FOR R = 1 TO 16
660  PRINT
670  HTAB 20
680  FOR C = 1 TO 16
690 Y$(R,C) = T$(R,C)
700 B$ =  CHR$ ( INT ( RND (1) * 26) + 65)
710  IF T$(R,C) =  CHR$ (32) THEN T$(R,C) = B$
720  PRINT T$(R,C);
730  NEXT C: NEXT R
740  HTAB 1: VTAB 23
750  PRINT "STRIKE ANY KEY TO SEE THE SOLUTION ...";
760  GET K$
770  HOME : PRINT M$: PRINT
780  GOSUB 980
790  VTAB 5
800  FOR R = 1 TO 16
810  PRINT : HTAB 20
820  FOR C = 1 TO 16
830  PRINT Y$(R,C);
840  NEXT C: NEXT R
850  HTAB 1: VTAB 22
860  PRINT "STRIKE ANY KEY TO CONTINUE ...";
870  GET K$
880  HOME : PRINT M$
890  PRINT "SELECT ONE:": PRINT
900  PRINT  TAB( 5)"1 - DO A NEW PUZZLE
910  PRINT  TAB( 5)"2 - END THE PROGRAM
920  PRINT : PRINT
930  GET K$
940  IF K$ < "1" OR K$ > "2" THEN 930
950 K =  VAL (K$)
960  IF K = 1 THEN 60
```

```
970  HOME : END
980  PRINT "WORD LIST"
990  FOR N = 1 TO 9: PRINT "-";: NEXT N
1000  PRINT : PRINT
1010  FOR N = 1 TO 8
1020  PRINT N$(N)
1030  NEXT N
1040  RETURN
```

Program 32 HI/LO GUESSING GAME

"He who plays a game well plays to delight his spirit; but he who wagers a game wagers his own soul."

—Some old-time nurd

No book of BASIC programs can be complete without a version of the ol' high/low guessing game. This one features multiple players, some wagering, and a generous bankroll to get things started in an interesting fashion. Even if you are weary of plain old high/low guessing games, you will find this version adds a bit of spice.

```
10  REM  ** BETTING HI/LO GAME **
20  REM
30  FOR N = 1 TO 17:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 1 TO 40:Y$ = Y$ + "$":L$ = L$ + "=": NEXT N
50 M$ = X$ + "HI/LO" +  CHR$ (13) + Y$
60  TEXT : HOME : PRINT M$
70  PRINT "THIS IS A HI/LO GUESSING GAME FOR 1 TO"
80  PRINT "5 PLAYERS.  THE COMPUTER PICKS A NUM-"
90  PRINT "BER BETWEEN 1 AND 100. IT IS THEN UP"
100  PRINT "TO THE PLAYER(S) TO GUESS WHAT IT IS."
110  PRINT : PRINT "A LITTLE SIDE BETTING ADDS SOME SPICE"
120  PRINT "TO THE WHOLE THING."
130  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
140  GET K$
150  HOME : PRINT M$
160  PRINT "HOW MANY PEOPLE ARE PLAYING ";
170  INPUT "(1-5)?";NP%
180 NP = NP%: IF NP > 0 AND NP <  = 5 THEN 200
190  GOTO 170
200  PRINT : PRINT
210  FOR N = 1 TO NP
220  HOME : PRINT M$
230  PRINT "PLAYER #"N", ENTER YOUR NAME:"
240  HTAB 5: INPUT X$
250  IF  LEN (X$) > 0 AND  LEN (X$) < 20 THEN 270
260  PRINT "USE A REAL NAME, PLEASE.": GOTO 240
270 P$(N) = X$: NEXT N
280  FOR N = 1 TO NP:M(N) = 100: NEXT N
290  HOME : PRINT M$
300  PRINT "PLACE YOUR BET:": PRINT
310 P = 0
320  PRINT "PLAYER";: HTAB 21: PRINT "FUNDS";: HTAB 28: PRINT "BET"
330  PRINT L$: PRINT
340  FOR N = 1 TO NP
350  PRINT P$(N);: HTAB 21: PRINT "$"M(N);
360  IF M(N) = 0 THEN B(N) = 0: PRINT : GOTO 420
370  HTAB 28: PRINT "$";
380  INPUT "";B(N)
390  IF B(N) > 0 AND B(N) <  = M(N) THEN 410
400  HTAB 18: PRINT "TRY AGAIN:";: GOTO 370
410 P = P + B(N)
```

```
420  NEXT N
430  PRINT : PRINT "THE TOTAL POT IS $"P
440  HTAB 1: VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
450  GET K$
460 RG =  INT (100 *  RND (1)) + 1
470  HOME : PRINT M$
480  PRINT "GUESS A NUMBER BETWEEN 1 AND 100:": PRINT
490  PRINT "PLAYER";: HTAB 21: PRINT "GUESS"
500 LG = 0:HG = 0
510  PRINT L$
520  FOR N = 1 TO NP
530  IF M(N) = 0 THEN G(N) = 0: GOTO 580
540  PRINT P$(N);: HTAB 21
550  INPUT G%:G = G%
560  IF G > 0 AND G <  = 100 THEN G(N) = G: GOTO 580
570  HTAB 11: PRINT "TRY AGAIN:": GOTO 550
580  NEXT N
590  FOR N = 1 TO NP
600  IF M(N) = 0 THEN 640
610  IF G(N) < RG THEN LG = LG + 1
620  IF G(N) > RG THEN HG = HG + 1
630  IF G(N) = RG THEN 780
640  NEXT N
650  PRINT
660  IF LG = 1 THEN  PRINT "1 PLAYER ";: GOTO 680
670  PRINT LG" PLAYERS ";
680  PRINT "GUESSED TOO LOW."
690  IF HG = 1 THEN  PRINT "1 PLAYER ";: GOTO 710
700  PRINT HG" PLAYERS ";
710  PRINT "GUESSED TOO HIGH."
720  VTAB 21: PRINT "STRIKE THE SPACE BAR TO GUESS AGAIN"
730  HTAB 3: PRINT "(OR THE X KEY TO END THE GAME)";
740  GET K$
750  IF K$ =  CHR$ (32) THEN 470
760  IF K$ = "X" THEN 960
770  GOTO 740
780  HOME : PRINT M$
790  FOR K = 1 TO 4: CALL  - 198: NEXT K
800  INVERSE : PRINT P$(N);: NORMAL
810  PRINT " GUESSED CORRECTLY."
820  PRINT : PRINT "THE NUMBER IS ";RG
830 NB = 0
840  FOR K = 1 TO NP
850  IF K = N THEN M(K) = M(K) + P - B(K): GOTO 880
860 M(K) = M(K) - B(K)
870  IF M(K) <  = 0 THEN NB = NB + 1
880  NEXT K
890  IF NB = NP - 1 THEN 960
900  VTAB 21: PRINT "STRIKE THE SPACE BAR FOR THE NEXT ROUND"
910  HTAB 3: PRINT "(OR THE X KEY TO END THE GAME)";
920  GET K$
930  IF K$ =  CHR$ (32) THEN 290
940  IF K$ = "X" THEN 960
950  GOTO 920
960  HOME : PRINT M$
970  PRINT "GAME SUMMARY:": PRINT L$
```

```
980  FOR N = 1 TO NP
990  PRINT P$(N);: HTAB 21: PRINT M(N)
1000  NEXT N
1010  VTAB 21: END
```

Program 33 FAIR HI/LO

"What's fair is fair."

—Katharine Hepburn in *The African Queen*

Wagering on the Hi/Lo Guessing Game (Program 32) can be risky business, and it can be downright silly business if you are losing. After all, it's your computer, and no one but you has a right to make a couple of bucks with it.

This version of the ol' HI/LO game gives you a chance to recoup some of your losses. It runs just like the legitimate version, but you can set it up to load the results very heavily in your favor. Here's how it works.

When the program asks you to enter your name, make sure that you sneak a space at the end of your entry. If your first name is Billy, for instance, type your name as BILLY and discretely strike the space bar before striking the return key. From that moment on, the computer knows when it is dealing with you.

Then, when it is your turn to guess the number, enter any number you choose. The "secret" number becomes *your guess plus 10*. So if you guess 50 the first time, the correct answer will be 60—and you can enter that number (and win the round) anytime thereafter. Incidentally, if your first guess is greater than 90, the correct number becomes 90.

Omit the space after your name, and the game runs in a perfectly legitimate fashion.

```
10  REM  ** FAIR BETTING HI/LO GAME **
20  REM
30  FOR N = 1 TO 17:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 1 TO 40:Y$ = Y$ + "$":L$ = L$ + "=": NEXT N
50 M$ = X$ + "HI/LO" +  CHR$ (13) + Y$
60  TEXT : HOME : PRINT M$
70  PRINT "THIS IS A HI/LO GUESSING GAME FOR 1 TO"
80  PRINT "5 PLAYERS.  THE COMPUTER PICKS A NUM-"
90  PRINT "BER BETWEEN 1 AND 100. IT IS THEN UP"
100  PRINT "TO THE PLAYER(S) TO GUESS WHAT IT IS."
110  PRINT : PRINT "A LITTLE SIDE BETTING ADDS SOME SPICE"
120  PRINT "TO THE WHOLE THING."
130  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
140  GET K$
150  HOME : PRINT M$
160  PRINT "HOW MANY PEOPLE ARE PLAYING ";
170  INPUT "(1-5)?";NP%
180 NP = NP%: IF NP > 0 AND NP <  = 5 THEN 200
190  GOTO 170
200  PRINT : PRINT
210  FOR N = 1 TO NP
220  HOME : PRINT M$
230  PRINT "PLAYER #"N", ENTER YOUR NAME:"
240  HTAB 5: INPUT X$
250  IF  LEN (X$) > 0 AND  LEN (X$) < 20 THEN 270
260  PRINT "USE A REAL NAME, PLEASE.": GOTO 240
270 P$(N) = X$: NEXT N
```

```
280  FOR N = 1 TO NP:M(N) = 100: NEXT N
290  HOME : PRINT M$
300 CF = 0
310  PRINT "PLACE YOUR BET:": PRINT
320 P = 0
330  PRINT "PLAYER";: HTAB 21: PRINT "FUNDS";: HTAB 28: PRINT "BET"
340  PRINT L$: PRINT
350  FOR N = 1 TO NP
360  PRINT P$(N);: HTAB 21: PRINT "$"M(N);
370  IF M(N) = 0 THEN B(N) = 0: PRINT : GOTO 430
380  HTAB 28: PRINT "$";
390  INPUT "";B(N)
400  IF B(N) > 0 AND B(N) <  = M(N) THEN 420
410  HTAB 18: PRINT "TRY AGAIN:";: GOTO 380
420 P = P + B(N)
430  NEXT N
440  PRINT : PRINT "THE TOTAL POT IS $"P
450  HTAB 1: VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
460  GET K$
470 RG =  INT (100 *  RND (1)) + 1
480  HOME : PRINT M$
490  PRINT "GUESS A NUMBER BETWEEN 1 AND 100:": PRINT
500  PRINT "PLAYER";: HTAB 21: PRINT "GUESS"
510 LG = 0:HG = 0
520  PRINT L$
530  FOR N = 1 TO NP
540  IF M(N) = 0 THEN G(N) = 0: GOTO 620
550  PRINT P$(N);: HTAB 21
560  INPUT G%:G = G%
570  IF G > 0 AND G <  = 100 THEN G(N) = G: GOTO 590
580  HTAB 11: PRINT "TRY AGAIN:": GOTO 560
590  IF  NOT (CF = 0 AND  RIGHT$ (P$(N),1) =  CHR$ (32)) THEN 620
600  IF G(N) + 10 > 100 THEN RG = 90:CF = 1: GOTO 620
610 RG = G(N) + 10:CF = 1
620  NEXT N
630  FOR N = 1 TO NP
640  IF M(N) = 0 THEN 680
650  IF G(N) < RG THEN LG = LG + 1
660  IF G(N) > RG THEN HG = HG + 1
670  IF G(N) = RG THEN 820
680  NEXT N
690  PRINT
700  IF LG = 1 THEN  PRINT "1 PLAYER ";: GOTO 720
710  PRINT LG" PLAYERS ";
720  PRINT "GUESSED TOO LOW."
730  IF HG = 1 THEN  PRINT "1 PLAYER ";: GOTO 750
740  PRINT HG" PLAYERS ";
750  PRINT "GUESSED TOO HIGH."
760  VTAB 21: PRINT "STRIKE THE SPACE BAR TO GUESS AGAIN"
770  HTAB 3: PRINT "(OR THE X KEY TO END THE GAME)"
780  GET K$
790  IF K$ =  CHR$ (32) THEN 480
800  IF K$ = "X" THEN 1000
810  GOTO 780
820  HOME : PRINT M$
830  FOR K = 1 TO 4: CALL  - 198: NEXT K
```

```
840  INVERSE : PRINT P$(N);: NORMAL
850  PRINT " GUESSED CORRECTLY."
860  PRINT : PRINT "THE NUMBER IS ";RG
870 NB = 0
880  FOR K = 1 TO NP
890  IF K = N THEN M(K) = M(K) + P - B(K): GOTO 920
900 M(K) = M(K) - B(K)
910  IF M(K) <  = 0 THEN NB = NB + 1
920  NEXT K
930  IF NB = NP - 1 THEN 1000
940  VTAB 21: PRINT "STRIKE THE SPACE BAR FOR THE NEXT ROUND"
950  HTAB 3: PRINT "(OR THE X KEY TO END THE GAME)";
960  GET K$
970  IF K$ =  CHR$ (32) THEN 290
980  IF K$ = "X" THEN 1000
990  GOTO 960
1000  HOME : PRINT M$
1010  PRINT "GAME SUMMARY:": PRINT L$
1020  FOR N = 1 TO NP
1030  PRINT P$(N);: HTAB 21: PRINT M(N)
1040  NEXT N
1050  VTAB 21: END
```

Program 34 COMBINATION LOCK

"If it is true that the last bolt is always the one that sticks, it is equally true that the last key is the one that opens the lock."

—Overheard in a hardware store in Hong Kong

If you are no good at this game, you will most likely give up with no harm done. If you are fairly good, it will drive you nuts. If you are exceedingly good, you will never win. In any event, it's worth a try.

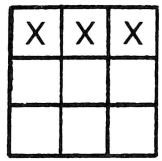
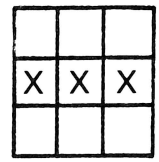
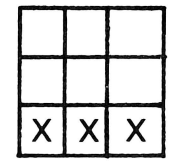
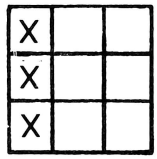
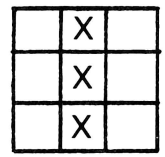
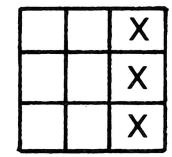
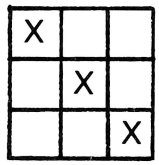
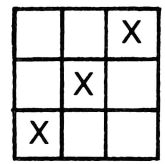
```
10  REM   ** COMBINATION LOCK GAME **
20  REM
30  TEXT :L = 2
40 M$ = "COMBINATION LOCK CHALLENGE"
50  HOME : PRINT  TAB( 7)M$: PRINT : GOSUB 420
60  VTAB (10): PRINT "STRIKE ANY KEY TO BEGIN ...";
70  GET K$
80  HOME : PRINT M$: PRINT "FOR LOCKSMITH LEVEL "L: PRINT : GOSUB 420
90 S = 0
100  PRINT "ENTER COMBINATIONS OF "L" DIGITS
110  PRINT  TAB( 5)"(OR X TO ABORT THE ATTEMPT)": PRINT
120  FOR N = 1 TO L:A(N) =  INT (10 *  RND (1)): NEXT N
130  PRINT "?";
140  FOR N = 1 TO L
150  GET K$
160  IF  NOT (K$ = "X") THEN 190
170  IF L > 1 THEN L = L - 1:AF = 2: GOTO 350
180 AF = 0: GOTO 340
190  IF  ASC (K$) < 48 OR  ASC (K$) > 57 THEN 150
200  PRINT  VAL (K$);:G(N) =  VAL (K$)
210  FOR X = 1 TO L: IF  VAL (K$) = A(X) THEN  CALL  - 198
220  NEXT X,N
230  PRINT :S = S + 1
240  FOR N = 1 TO L
250  IF A (N) <> G (N) THEN 130
260  NEXT N
270  PRINT : PRINT "THAT IS THE COMBINATION!!"
280  FOR N = 1 TO 5: CALL  - 198. FOR T = 1 TO 200: NEXT T,N
290  PRINT "YOU GOT IT IN "S" ATTEMPT";: IF S <  > 1 THEN  PRINT "S";
300  PRINT : PRINT : PRINT
310  IF S <  = L ^ 2 THEN L = L + 1:AF = 1: GOTO 330
320 AF = 0
330  IF AF = 1 THEN  PRINT "YOU HAVE ADVANCED TO";
340  IF AF = 0 THEN  PRINT "YOU RETAIN";
350  IF AF = 2 THEN  PRINT : PRINT "YOU HAVE BEEN DEMOTED TO";
360  PRINT " LOCKSMITH LEVEL "L
370  PRINT "DO YOU WANT TO CONTINUE (Y/N)?"
380  GET K$
390  IF K$ = "Y" THEN 80
400  IF K$ = "N" THEN  HOME : END
410  GOTO 380
420  FOR N = 1 TO 40: PRINT "=";: NEXT N
430  PRINT : RETURN
```

Program 35 9-CELL MAGIC SQUARE GENERATOR

"The advancement and perfection of mathematics are intimately connected with the prosperity of the State."

—Napoleon I

A 9-cell magic square is a 3 × 3 arrangement of numbers that add up to the same value, when regarded horizontally, vertically and diagonally as shown below.

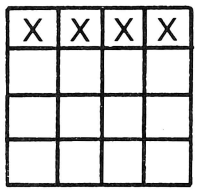
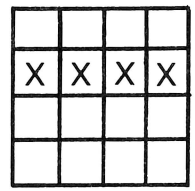
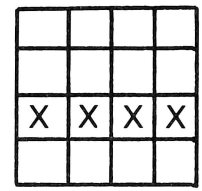
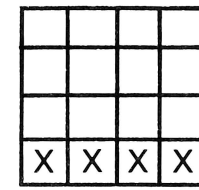
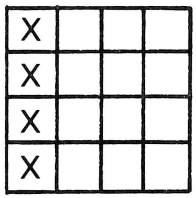
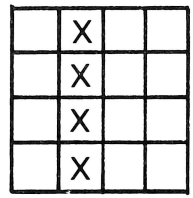
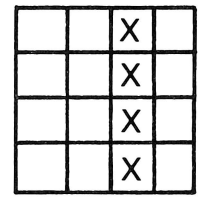
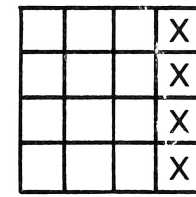
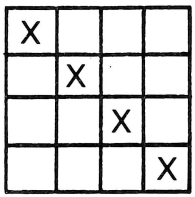
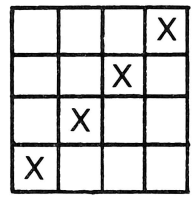
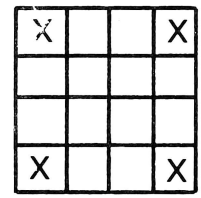
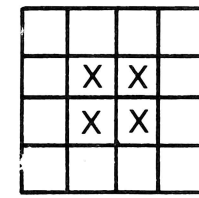
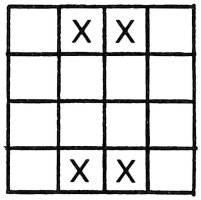
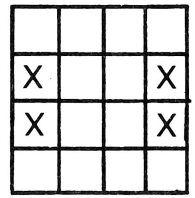
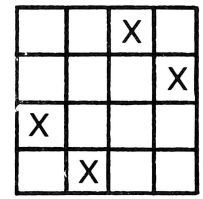
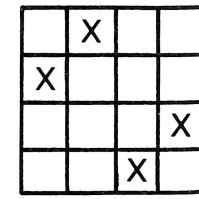









```
10  REM  9-CELL MAGIC SQUARE
20  REM
30  FOR N = 0 TO 39:X$ = X$ + " ": NEXT N
40  FOR N = 0 TO 9:Y$ = Y$ +  CHR$ (32): NEXT N
50 M$ = Y$ + "9-CELL MAGIC SQUARE" +  CHR$ (13) + X$
60  FOR ROW = 1 TO 3: FOR COL = 1 TO 3
70  READ L(ROW,COL)
80  NEXT COL: NEXT ROW
90 S =  INT (99 *  RND (1)) + 15: IF (S / 3) <  >  INT (S / 3) THEN 90
100  TEXT : HOME : PRINT M$
110 N = (S - 15) / 3
120  PRINT "THE MAGIC SUM FOR THIS SQUARE IS "S"."
130  INVERSE
140  FOR ROW = 1 TO 3: FOR COL = 1 TO 3
150  VTAB ROW * 3 + 7
160  HTAB 4 * COL + 10
170  PRINT L(ROW,COL) + N
180  NEXT COL: PRINT : PRINT : NEXT ROW
190  NORMAL
200  VTAB 20: PRINT "STRIKE THE SPACE BAR TO SEE ANOTHER"
210  PRINT "MAGIC SQUARE (OR STRIKE THE X KEY TO"
220  PRINT "END THIS PROGRAM) ...";
230  GET K$:X =  RND (1)
240  IF K$ = "X" THEN  HOME : END
250  IF  ASC (K$) = 32 THEN 90
260  GOTO 230
270  DATA   8,1,6,3,5,7,4,9,2
```

Program 36 16-CELL MAGIC SQUARE

"Mathematics is the queen of sciences and number theory the queen of mathematics."
—Karl F. Gauss

A 16-cell magic square is not only larger than its 9-cell counterpart (Program 35), but its sums can be derived in a greater number of ways as shown below.

```
10  REM   ** 16-CELL MAGIC SQUARES **
20  REM
30  FOR N = 0 TO 9:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 0 TO 39:Y$ = Y$ + " ": NEXT N
50 M$ = X$ + "16-CELL MAGIC SQUARES" +  CHR$ (13) + Y$
60  FOR ROW = 1 TO 4: FOR COL = 1 TO 4
70  READ L(1,ROW,COL)
80  NEXT COL: NEXT ROW
90  TEXT : HOME : PRINT M$
100  PRINT "ENTER A MAGIC SQUARE SUM OF YOUR CHOICE"
110  PRINT "(ANY WHOLE NUMBER BETWEEN 34 AND 1000):"
120  PRINT : INPUT S
130  IF S >  = 34 AND S <  = 1000 THEN 160
140  PRINT : PRINT "YOUR SELECTION IS OUT OF RANGE."
150  PRINT "PLEASE TRY AGAIN ...": GOTO 120
160  HOME : PRINT M$: PRINT
170  PRINT "YOU SELECTED A SUM OF "S" FOR YOUR"
180  PRINT "MAGIC SQUARE. THE SQUARE LOOKS LIKE"
190  PRINT "THIS:"
200  PRINT : PRINT : PRINT
210 NR = (S - 30) / 4:N =  INT (NR):R = (NR - N) * 4
220  FOR ROW = 1 TO 4: FOR COL = 1 TO 4
230  IF L(1,ROW,COL) >  = 13 THEN 250
240  PRINT  TAB( 4 * COL + 7);L(1,ROW,COL) + N - 1;: GOTO 260
250  PRINT  TAB( 4 * COL + 7);L(1,ROW,COL) + N + R - 1;
260  NEXT COL: PRINT : PRINT : NEXT ROW
270  PRINT : PRINT
280  PRINT "STRIKE THE SPACE BAR FOR ANOTHER SQUARE"
290  PRINT "OR STRIKE THE X KEY TO END THE PROGRAM.";
300  GET K$
310  IF  ASC (K$) = 32 THEN 90
320  IF K$ = "X" THEN  HOME : END
330  GOTO 300
340  DATA  8,11,14,1,13,2,7,12,3,16,9,6,10,5,4,15
```

Program 37 NUMBER-SEQUENCE TEST

"Geez, I hate these kinds of problems!"

—Overheard during an S.A.T. examination

```
10  REM  ** NUMBER-SEQUENCE TEST **
20  REM
30  FOR K = 1 TO 10:M$ =  CHR$ (32): NEXT K
40 M$ = M$ + "NUMBER-SEQUENCE TEST" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "THE COMPUTER IS ABOUT TO DISPLAY A LIST"
80  PRINT "OF NUMBERS. YOUR TASK IS TO DETERMINE"
90  PRINT "THE NEXT NUMBER IN THE SEQUENCE."
100  VTAB 21: PRINT "STRIKE ANY KEY TO SEE THE LIST ...";
110  GET A$
120  HOME : PRINT M$
130  PRINT "HERE IS A SEQUENCE OF NUMBERS:": PRINT
140 M =  INT (5 *  RND (1)) + 1
150 A =  INT (10 *  RND (1)) - 5
160 S =  INT (10 *  RND (1)) + 1
170  FOR K = 1 TO 4
180 S(K) = S
190  PRINT S",";
200  IF K = 4 THEN  PRINT "..."
210 S = S * M + A
220  NEXT K
230  VTAB 16: PRINT "WHAT IS THE NEXT NUMBER? ";
240  INPUT "";N
250  HOME : PRINT M$
260  PRINT "YOU SELECTED:"
270  PRINT : PRINT  TAB( 5)N
280  PRINT
290  PRINT "THE CORRECT SEQUENCE IS:"
300  PRINT : PRINT  TAB( 5);
310  FOR K = 1 TO 4: PRINT S(K)",";
320  NEXT K
330  FLASH : PRINT S: NORMAL
340  PRINT : PRINT
350  IF N = S THEN  PRINT "YOU ARE CORRECT.": GOTO 370
360  PRINT "SORRY ABOUT THAT."
370  VTAB 21: PRINT "STRIKE THE SPACE BAR TO TRY AGAIN"
380  PRINT "(OR THE X KEY TO END THE PROGRAM) ...";
390  GET K$
400  IF K$ =  CHR$ (32) THEN 120
410  IF K$ = "X" THEN  HOME : END
420  GOTO 390
```

Program 38 IMPROVED CASH FLOW

"A penny under the table is worth ten in the bank."
—Final entry in the diary of an anonymous income-tax evader

If you share your checking account with another person, there are times when it can be rather troublesome to have that individual spend too much for you. This account-balancing program can be exceedingly helpful in that regard.

Enter the account history as requested by the program. Striking the space bar to review the account, however, shows a bunch of phony figures that makes it appear that you have far less money than you do. That is the version you should show your checkbook partner. But when you want to review the truth of the matter, substitute the RETURN key for the space bar.

```
10  REM  ** CASH-FLOW MINDER **
20  REM
30  FOR N = 1 TO 12:M$ = M$ +  CHR$ (32): NEXT N
40 M$ = M$ + "CASH-FLOW MINDER" +  CHR$ (13)
50  FOR N = 1 TO 40:M$ = M$ + "$": NEXT N
60  TEXT : HOME : PRINT M$
70  PRINT "KEEPING RECORDS OF CASH FLOW IS A VITAL"
80  PRINT "PART OF MODERN BUSINESS. SOME TECH-"
90  PRINT "NIQUES, HOWEVER, ARE BETTER THAN OTHERS"
100  PRINT "(AS ILLUSTRATED BY THIS PROGRAM)."
110  PRINT : PRINT
120  FLASH : PRINT "NOTICE:": NORMAL
130  PRINT : PRINT  TAB( 5)"THE AUTHORS OF THIS PROGRAM"
140  PRINT  TAB( 5)"WILL NOT ACCOMPANY YOU TO"
150  PRINT  TAB( 5)"AN IRS AUDIT."
160  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
170  GET K$
180  HOME : PRINT M$
190  PRINT "ENTER YOUR CURRENT ACCOUNT BALANCE:"
200  PRINT
210  PRINT  TAB( 5);
220  INPUT "$";A
230 X =  INT (10 * A) / 100
240  HOME : PRINT M$
250 N = 0
260  PRINT "ENTER UP TO 10 DEPOSITS TO THAT"
270  PRINT "ACCOUNT. ENTER 0 TO END THE LIST"
280  PRINT "AT ANY TIME."
290  GOSUB 840
300 NB = N
310  FOR N = 1 TO NB
320 B(N) = F(N):Y(N) =  INT (10 * F(N)) / 100
330  NEXT N
340  HOME : PRINT M$
350  PRINT "ENTER UP TO 10 DEBITS TO THAT ACCOUNT."
360  PRINT "ENTER 0 TO END THE LIST AT ANY TIME."
370  GOSUB 840
```

```
380 NC = N
390  FOR N = 1 TO NC
400 C(N) = F(N):Z(N) =  INT (100 * F(N)) / 10
410  NEXT N
420  HOME : PRINT M$
430  PRINT
440  PRINT "DEPOSIT SUMMARY:": PRINT
450 BS = 0
460  FOR N = 1 TO NB
470  PRINT "$";
480  IF PH = 0 THEN 510
490  PRINT B(N)
500 BS = BS + B(N): GOTO 530
510  PRINT Y(N)
520 BS = BS + Y(N)
530  NEXT N
540  HTAB 20: VTAB 5
550  PRINT "DEBIT SUMMARY:": PRINT
560 CS = 0
570  FOR N = 1 TO NB
580  HTAB 20: PRINT "$";
590  IF PH = 0 THEN 620
600  PRINT C(N)
610 CS = CS + C(N): GOTO 640
620  PRINT Z(N)
630 CS = CS + Z(N)
640  NEXT N
650  VTAB 21: PRINT "STRIKE ANY KEY TO SEE TOTALS ...";
660  GET K$
670  HOME : PRINT M$
680  PRINT "STARTING BALANCE: $";
690  IF PH = 0 THEN  PRINT X: GOTO 710
700  PRINT A
710  PRINT "TOTAL DEPOSITS: $"BS
720  PRINT "TOTAL DEBITS: $"CS
730  PRINT : PRINT "CURRENT BALANCE: $";
740  IF PH = 0 THEN 760
750  PRINT A + BS - CS: GOTO 770
760  PRINT X + BS - CS
770  VTAB 21: PRINT "STRIKE THE SPACE BAR TO SEE AGAIN"
780  PRINT "(OR THE X KEY TO END) ...";
790  GET K$
800  IF K$ =  CHR$ (32) THEN PH = 0: GOTO 420
810  IF K$ =  CHR$ (13) THEN PH = 1: GOTO 420
820  IF K$ = "X" THEN  HOME : END
830  GOTO 790
840 N = 1
850  PRINT
860  PRINT  TAB( 5);
870  INPUT "$";F(N)
880  IF F(N) = 0 THEN 920
890 N = N + 1
900  IF N > 10 THEN 920
910  GOTO 860
920 N = N - 1: RETURN
```

Program 39 COUNT THE STARS

Count the stars in the cold, dark sky,
Count the cheese balls in frosty moon's eye.
Make a wish and turn 'round twice,
Get yourself dizzy and fall on the ice.

—Medieval Hebrew Proverb

```
10  REM  ** COUNT THE STARS **
20  REM
30 M$ = "COUNT THE STARS" +  CHR$ (13)
40  FOR K = 1 TO 40:M$ = M$ + "-": NEXT K
50  TEXT : HOME : PRINT M$
60 X =  INT (250 *  RND (1)) + 100
70  FOR N = 1 TO X
80 COL =  INT (40 *  RND (1)) + 1
90 ROW =  INT (18 *  RND (1)) + 3
100  IF  SCRN( COL,ROW) =  ASC ("*") THEN 80
110  HTAB COL: VTAB ROW: PRINT "*"
120  NEXT N
130  INVERSE
140  FOR H = 9 TO 0 STEP  - 1
150  HTAB 1: VTAB 22
160  PRINT "SECONDS 'TIL DAWN: "H
170  FOR T = 1 TO 500: NEXT T
180  NEXT H
190  NORMAL : HOME : PRINT M$
200  PRINT "HOW MANY STARS WERE IN THE SKY";
210  INPUT NS
220  PRINT : PRINT "THERE WERE "X" STARS IN THE SKY."
230  PRINT
240 G =  ABS (NS - X)
250  IF G < 100 THEN 290
260  PRINT "MAYBE YOU OUGHT TO SPEND YOUR EVENINGS"
270  PRINT "DOING SOMETHING MORE CONSTRUCTIVE."
280  GOTO 380
290  IF G < 50 THEN 320
300  PRINT "THAT'S NOT SO GOOD; BUT YOU COULD DO"
310  PRINT "WORSE.": GOTO 380
320  IF G < 10 THEN 340
330  PRINT "NOT A BAD GUESS.": GOTO 380
340  IF G = 0 THEN 370
350  PRINT "CLOSE ... BUT NO CIGAR."
360  GOTO 380
370  PRINT "HOW IN THE WORLD DID YOU DO THAT??"
380  HTAB 1: VTAB 21
390  PRINT "STRIKE THE SPACE BAR TO TRY AGAIN (OR"
400  PRINT "THE X KEY TO END THE PROGRAM) ...";
410  GET K$
420  IF K$ =  CHR$ (32) THEN 50
430  IF K$ = "X" THEN  HOME : END
440  GOTO 410
```

Program 40 SIMPLE DICE ROLL

"Maybe the best way to throw dice is into the river."
—Overheard one morning on a river boat near Memphis

```
10  REM   ** SIMPLE DICE ROLL **
20  REM
30  FOR N = 0 TO 14:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 0 TO 39:Y$ = Y$ + "*": NEXT N
50 M$ = X$ + "DICE GAME" +  CHR$ (13) + Y$
60  TEXT : HOME : PRINT M$: PRINT
70  PRINT "HOW MANY DICE DO YOU WANT TO ROLL?"
80  PRINT : INPUT "(1 THRU 6) ...";ND
90 ND =  INT (ND): IF ND > 0 AND ND < 7 THEN 120
100  PRINT : PRINT "INVALID NUMBER OF DICE."
110  PRINT "TRY AGAIN ...": GOTO 80
120  VTAB 20: PRINT "STRIKE ANY KEY TO BEGIN ...";
130  GET K$:X =  RND (1): IF K$ = "=" THEN 130
140  HOME : PRINT M$
150 DT = 0
160  FOR N = 1 TO ND
170 D(N) =  INT (6 *  RND (1) + 1)
180  PRINT : PRINT "DIE "N": "D(N)
190 DT = DT + D(N)
200  NEXT N
210  IF ND = 1 THEN 230
220  PRINT : PRINT : PRINT "TOTAL: "DT
230  VTAB 20: PRINT "STRIKE THE SPACE BAR TO ROLL AGAIN"
240  PRINT "(OR STRIKE THE X KEY TO END THE PROGRAM)"
250  GET K$:X =  RND (1): IF K$ = "X" THEN 270
260  GOTO 140
270  HOME : END
```

Program 41 BANKROLL DICE

"The urge to gamble is so universal and its practice so pleasurable that I assume it must be evil."

—Heywood Brown

This program can help you pay for your computer or, alternatively, win you a free ride to a dark place in the countryside.

```
10  REM  ** BANKROLL DICE GAME **
20  REM
30 M$ = "BANKROLL DICE  (CREDIT LIMIT OF $25000)" +  CHR$ (13)
40  FOR N = 1 TO 40:M$ = M$ + "$": NEXT N
50  TEXT : HOME : PRINT M$
60  PRINT "HERE IS YOUR GOLDEN OPPORTUNITY TO ROLL"
70  PRINT "A DIE, BETTING AGAINST THIS COMPUTER."
80  PRINT "(WHAT DO COMPUTERS KNOW ABOUT DICE,"
90  PRINT "ANYHOW?)"
100  PRINT : PRINT "YOU NOW HAVE A TOKEN CREDIT OF $1000,"
110  PRINT "BUT YOUR CREDIT IS GOOD UP TO THE HOUSE"
120  PRINT "LIMIT OF $25,000."
130  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN GETTING RICH ...";
140  GET K$
150 PM = 1000
160  HOME : PRINT M$
170  IF PM < 0 THEN 190
180  PRINT "YOU NOW HAVE $"PM: GOTO 200
190  PRINT "YOU ARE NOW IN THE HOLE BY $" ABS (PM)
200  PRINT : PRINT "CALL YOUR NUMBER (1-6) ";
210  GET K$
220  IF K$ < "1" OR K$ > "6" THEN 210
230 PN =  VAL (K$)
240  PRINT PN
250  PRINT : PRINT "PLACE YOUR BET: ";
260  INPUT "$";PB
270 PB =  INT (PB)
280  IF PB + PM <  = 25000 THEN 300
290  PRINT "HOUSE LIMIT IS $25000. TRY AGAIN ..."; GOTO 260
300  IF PB > 0 THEN 320
310  PRINT "YOU HAVE TO BET SOMETHING! TRY AGAIN ";: GOTO 260
320 CN =  INT (6 *  RND (1)) + 1
330  IF CN = PN THEN 320
340  PRINT : PRINT "THE HOUSE CALLS "CN
350  VTAB 21: PRINT "STRIKE ANY KEY TO ROLL THE DIE ..";
360  GET K$
370  FOR K = 1 TO 50
380  FOR T = 1 TO  INT ( RND (1) * 50 + 10)
390  NEXT T
400 CK =  PEEK ( - 16336)
410  NEXT K
420  FOR K = 1 TO 3: CALL ( - 198): NEXT K
430 FG = 0
```

```
440  IF  INT (8 *  RND (1)) = 0 THEN FG = 1
450  IF FG = 1 THEN 500
460 DN =  INT (6 *  RND (1)) + 1
470  IF DN = PN THEN 460
480  IF  ABS (DN - CN) >  =  ABS (DN - PN) THEN 460
490  GOTO 510
500 DN =  INT (6 *  RND (1)) + 1
510  HOME : PRINT M$
520  PRINT "THE DIE SHOWS "DN
530  PRINT "YOU PICKED "PN
540  PRINT "THE HOUSE PICKED "CN
550  IF  ABS (DN - CN) <  ABS (DN - PN) THEN 590
560  INVERSE : PRINT "YOU WIN": NORMAL
570 PM = PM + 2 * PB
580  GOTO 620
590  INVERSE : PRINT "HOUSE WINS": NORMAL
600 PM = PM - PB
610  IF PM <  - 25000 THEN 710
620  IF PM >  = 0 THEN 680
630  VTAB 21: PRINT "DO YOU WANT TO PLAY AGAIN (Y/N)? ";
640  GET K$
650  IF K$ = "Y" THEN 160
660  IF K$ = "N" THEN 770
670  GOTO 640
680  VTAB 21: PRINT "STRIKE ANY KEY TO PLAY AGAIN ...";
690  GET K$
700  GOTO 160
710  HOME : PRINT M$
720  PRINT "SORRY, YOUR DEBT IS ON THE ORDER OF"
730  PRINT "$25000."
740  PRINT : PRINT "WE REGRET THAT WE CANNOT EXTEND FURTHER"
750  PRINT "CREDIT AT THIS TIME."
760  GOTO 810
770  HOME : PRINT M$
780  PRINT "YOU HAVE A CURRENT DEBT IN THE AMOUNT"
790  PRINT "SHOWN BELOW:": PRINT
800  PRINT : PRINT "$" ABS (PM)
810  VTAB 19: PRINT "STRIKE ANY KEY TO SEE OPTIONS AVAILABLE"
820  PRINT "FOR RESOLVING THIS MATTER ...";
830  GET K$
840  HOME : PRINT M$
850  PRINT "WE CANNOT ACCEPT A CHECK OR I.O.U.": PRINT
860  PRINT "WE CAN ACCEPT ONE, OR A COMBINATION,"
870  PRINT "OF THE FOLLOWING ITEMS:": PRINT
880  PRINT  TAB( 5)"<A> CASH"
890  PRINT  TAB( 5)"<B> VISA
900  PRINT  TAB( 5)"<C> MASTERCHARGE
910  PRINT  TAB( 5)"<D> AMERICAN EXPRESS
920  PRINT : PRINT
930  PRINT "NOTE: CASH IS PAID OR CREDIT CARDS ARE"
940  PRINT "SIGNED OVER TO THE OWNER OF THIS COM-"
950  PRINT "PUTER."
```

Program 42 CARDS AT WAR

"Cards were at first for benefits designed, sent to amuse, not to enslave the mind."
—Garrick

```
10  REM  ** CARDS AT WAR **
20  REM
30  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "CARDS AT WAR" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "DO YOU WANT TO SEE THE INSTRUCTIONS?"
80  PRINT "(Y/N)";
90  GET K$
100  IF K$ = "Y" THEN 130
110  IF K$ = "N" THEN 330
120  GOTO 90
130  HOME : PRINT M$: SPEED= 100
140  PRINT "YOU AND YOUR COMPUTER ARE ABOUT TO PLAY"
150  PRINT "A VARIATION OF A POPULAR CARD GAME"
160  PRINT "CALLED 'WAR.'"
170  PRINT : PRINT "YOU AND THE COMPUTER BOTH BEGIN WITH"
180  PRINT "HANDS OF 26 CARDS. YOU BOTH PICK A"
190  PRINT "NUMBER BETWEEN 1 AND 5; AND IF THE"
200  PRINT "NUMBERS DO NOT MATCH, YOU BOTH PLACE"
210  PRINT "ONE CARD INTO THE POT. BUT IF THE"
220  PRINT "NUMBERS MATCH, YOU GO TO 'WAR.'"
230  PRINT : PRINT "GOING TO 'WAR' MEANS THAT YOU PICK A"
240  PRINT "NUMBER, 1 OR 2. IF YOU SELECT THE RIGHT"
250  PRINT "NUMBER, YOU GET THE CARDS FROM THE POT."
260  PRINT "OTHERWISE, THE COMPUTER GETS THEM."
270  PRINT
280  PRINT "THE FIRST TO GET ALL 52 CARDS WINS"
290  PRINT "THE GAME."
300  SPEED= 255
310  PRINT : PRINT "STRIKE THE SPACE BAR TO BEGIN ...";
320  GET K$
330  HOME : PRINT M$: PRINT
340 TP = 26:TC = 26
350 COUNT = 0
360 CC =  INT ( RND (1) * 5 + 1)
370  IF COUNT = 1 THEN 400
380  PRINT "THERE ARE NOW "COUNT" CARDS IN THE STACK."
390  GOTO 410
400  PRINT "THERE IS 1 CARD IN THE STACK."
410 COUNT = COUNT + 1
420  IF COUNT + TP < 52 AND COUNT + TC < 52 THEN 440
430  GOTO 510
440  PRINT : PRINT "PICK A NUMBER (1-5): ";
450  GET K$
460  IF K$ < "1" OR K$ > "5" THEN 450
470 NB =  VAL (K$)
480  PRINT NB
```

```
490  PRINT : PRINT "THE COMPUTER PICKS: "CC
500  IF NB <  > CC THEN 770
510  CALL ( - 198): CALL ( - 198): CALL ( - 198)
520  PRINT : PRINT
530  FLASH : PRINT " THIS IS A WAR ": NORMAL
540  PRINT : PRINT "PICK A NUMBER (1 OR 2) ";
550  GET K$
560  IF K$ < "1" OR K$ > "2" THEN 550
570 N =  VAL (K$)
580 WC =  INT ( RND (1) * 2 + 1)
590  HOME : PRINT M$
600  IF WC <  > N THEN 670
610  HOME : PRINT M$
620  PRINT : PRINT "** YOU WON THE CARDS **"
630  PRINT
640 TP = TP + COUNT:TC = TC - COUNT
650  PRINT "YOU WON "COUNT" CARDS FOR A TOTAL OF "TP"."
660 COUNT = 0: GOTO 710
670  PRINT : PRINT "** THE COMPUTER GETS THE CARDS **"
680 TC = TC + COUNT:TP = TP - COUNT
690  PRINT "IT WON "COUNT" CARDS FOR A TOTAL OF "TC" CARDS."
700 COUNT = 0
710  VTAB 21: PRINT "STRIKE THE SPACE BAR TO CONTINUE"
720  PRINT "(OR THE X KEY TO QUIT THE GAME) ...";
730  GET K$
740  IF K$ =  CHR$ (32) THEN 780
750  IF K$ = "X" THEN  HOME : END
760  GOTO 730
770  FOR T = 1 TO 1500: NEXT T
780  HOME : PRINT M$
790  IF TP > 52 THEN 820
800  IF TC > 52 THEN 870
810  GOTO 360
820  FOR K = 1 TO 5: CALL ( - 198): NEXT K
830  PRINT "YOU HAVE WON THE GAME"
840  PRINT : PRINT "WOULD YOU LIKE TO PLAY AGAIN (Y OR N)"
850  GET K$: IF K$ = "Y" THEN 330
860  END
870  FOR K = 1 TO 5: CALL ( - 198): NEXT K
880  PRINT : PRINT "THE COMPUTER WON THE GAME"
890  GOTO 840
```

Program 43 FLASH CARDS

"Think fast!"

—Twentieth-Century American figure of speech

```
10  REM  ** COMPUTER FLASH CARDS **
20  REM
30  FOR N = 1 TO 10:M$ =  CHR$ (32): NEXT N
40 M$ = M$ + "RED-HOT FLASH CARDS" +  CHR$ (13)
50  FOR N = 1 TO 40:M$ = M$ + "=": NEXT N
60  TEXT : HOME : PRINT M$
70  SPEED= 100
80  PRINT "THE DAWN OF THE COMPUTER AGE SHEDS NEW"
90  PRINT "LIGHT ON THE NEED FOR PEOPLE TO THINK"
100  PRINT "AND REACT FASTER THAN EVER BEFORE. THIS"
110  PRINT "NEED EXTENDS TO SOME OLDER EDUCATIONAL"
120  PRINT "TECHNIQUES."
130  PRINT : PRINT "HERE IS AN EXAMPLE -- ";
140  FLASH : PRINT "FLASH CARDS";: NORMAL
150  HTAB 1: SPEED= 255
160  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
170  GET K$
180  HOME : PRINT M$
190  HTAB 1: VTAB 10
200  FLASH : PRINT "ANSWER:" SPC( 2): NORMAL
210  INVERSE
220  FOR N = 1 TO 50
230 F =  INT (4 *  RND (1)) + 1
240 A =  INT (11 *  RND (1))
250 B =  INT (11 *  RND (1))
260  IF F < 4 THEN 290
270  IF B = 0 AND F = 4 THEN 250
280  IF A / B <  >  INT (A / B) THEN 250
290  HTAB 1: VTAB 8
300  CALL  - 198
310  ON F GOSUB 490,510,530,550
320  FOR T = 0 TO 100: NEXT T
330  PRINT "?" SPC( 2)
340  HTAB 20: VTAB 18
350  PRINT "CARD NO. "N
360  NEXT N
370  NORMAL
380  HOME : PRINT M$
390  PRINT "YOU GOT "U" CORRECT OUT OF "N - 1"."
400  PRINT
410  FOR N = 1 TO 10
420  READ D: PRINT  CHR$ (D);
430  NEXT N
440  PRINT : PRINT
450  FOR N = 1 TO 4
460  READ D$: PRINT  TAB( 5)D$" GRADE"
470  NEXT N
480  END
```

```
490  PRINT A" + "B" =" SPC( 2)
500 C = A + B: RETURN
510  PRINT A" - "B" =" SPC( 2)
520 C = A - B: RETURN
530  PRINT A" X "B" =" SPC( 2)
540 C = A * B: RETURN
550  PRINT A" / "B" =" SPC( 2)
560 C = A / B: RETURN
570  FOR T = 1 TO 500: NEXT
580  DATA  89,79,85,32,70,76,85,78,75,58
590  DATA  FIRST,SECOND,THIRD,FOURTH
```

Program 44 BLACKJACK

"I must complain the cards are ill shuffled till I have a good hand."

—Swift

```
10  REM  ** BLACKJACK **
20  REM
30  FOR N = 1 TO 14:M$ =  CHR$ (32): NEXT N
40 M$ = M$ + "BLACKJACK" +  CHR$ (13)
50  FOR N = 1 TO 39:B$ = B$ + "=": NEXT N
60 M$ = M$ + B$
70  TEXT : HOME : PRINT M$
80  PRINT "THIS GAME IS AN APPROXIMATION OF THE"
90  PRINT "POPULAR CARD GAME KNOWN AS 'BLACKJACK.'"
100  PRINT : PRINT "YOU AND THE DEALER (THE COMPUTER) DRAW"
110  PRINT "CARDS IN AN ATTEMPT TO COMPILE A SUM"
120  PRINT "THAT APPROACHES, BUT DOES NOT EXCEED,"
130  PRINT "21. (EXCEEDING 21 IS A 'BUST' -- YOU"
140  PRINT "AUTOMATICALLY LOSE THE ROUND.)"
150  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
160  GET K$
170  HOME : PRINT M$
180 DT = 0
190  FOR N = 1 TO  INT (2 *  RND (1)) + 3
200 D(N) =  INT (12 *  RND (1)) + 2
210 DT = DT + D(N)
220  NEXT N
230 DN = N - 1
240  HTAB 1: VTAB 4
250  PRINT "THE DEALER HAS "DN" CARDS, AND THE"
260  PRINT "TOP CARD IS "D(1)"."
270  PRINT B$
280  FOR N = 1 TO 2
290 P(N) =  INT (12 *  RND (1)) + 2
300  NEXT N
310 PN = N - 1
320 PT = 0
330  HTAB 1: VTAB 8
340  PRINT "YOUR CURRENT HAND LOOKS LIKE THIS:"
350  HTAB 1: VTAB 10
360  FOR N = 1 TO PN
370  PRINT P(N); SPC( 2)
380 PT = PT + P(N)
390  NEXT N
400  IF PT > 21 THEN 560
410  HTAB 1: VTAB 12: CALL  - 868
420  PRINT "WANT ANOTHER CARD (Y/N)? ";
430  GET K$
440  IF K$ <  > "Y" THEN 470
450 PN = PN + 1:P(PN) =  INT (12 *  RND (1)) + 2
460  GOTO 320
470  IF K$ <  > "N" THEN 430
480  HTAB 1: VTAB 14: PRINT B$
```

```
490  HTAB 1: VTAB 16
500  PRINT "YOU HAVE "PT"."
510  PRINT "DEALER HAS "DT"."
520  IF DT > 21 THEN 610
530  IF DT = PT THEN 640
540  IF  ABS (21 - DT) <  ABS (21 - PT) THEN 640
550  GOTO 610
560  HTAB 1: VTAB 12: CALL  - 868
570  HTAB 14
580  FLASH : PRINT "** BUSTED **"
590  FOR N = 1 TO 4: CALL  - 198: NEXT N
600  NORMAL : GOTO 640
610  HTAB 14: VTAB 19
620  INVERSE : PRINT "** YOU WIN **"
630  NORMAL : GOTO 670
640  HTAB 11: VTAB 19
650  INVERSE : PRINT "** DEALER WINS **"
660  NORMAL : GOTO 670
670  HTAB 1: VTAB 22
680  PRINT "WANT TO PLAY ANOTHER HAND (Y/N)? ";
690  GET K$
700  IF K$ = "Y" THEN 170
710  IF K$ = "N" THEN  HOME : END
720  GOTO 690
```

Program 45 FAIR BLACKJACK

"I always sit with mah back to tha wall. Thataways I can see whosa commin' through tha door."

—Line from the 1958 western film, *Billy's Brothers Make Snake Creek Look Bad.*

It's tough to beat the house with this one.

```
10  REM  ** FAIR BLACKJACK **
20  REM
30  FOR N = 1 TO 14:M$ =  CHR$ (32): NEXT N
40 M$ = M$ + "BLACKJACK" +  CHR$ (13)
50  FOR N = 1 TO 39:B$ = B$ + "=": NEXT N
60 M$ = M$ + B$
70  TEXT : HOME : PRINT M$
80  PRINT "THIS GAME IS AN APPROXIMATION OF THE"
90  PRINT "POPULAR CARD GAME KNOWN AS 'BLACKJACK.'"
100  PRINT : PRINT "YOU AND THE DEALER (THE COMPUTER) DRAW"
110  PRINT "CARDS IN AN ATTEMPT TO COMPILE A SUM"
120  PRINT "THAT APPROACHES, BUT DOES NOT EXCEED,"
130  PRINT "21. (EXCEEDING 21 IS A 'BUST' -- YOU"
140  PRINT "AUTOMATICALLY LOOSE THE ROUND.)"
150  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
160  GET K$
170  HOME : PRINT M$
180 DT = 0
190  FOR N = 1 TO  INT (2 *  RND (1)) + 3
200 D(N) =  INT (12 *  RND (1)) + 2
210 DT = DT + D(N)
220  NEXT N
230 DN = N - 1
240  HTAB 1: VTAB 4
250  PRINT "THE DEALER HAS "DN" CARDS, AND THE"
260  PRINT "TOP CARD IS "D(1)"."
270  PRINT B$
280  FOR N = 1 TO 2
290 P(N) =  INT (12 *  RND (1)) + 2
300  NEXT N
310 PN = N - 1
320 PT = 0
330  HTAB 1: VTAB 8
340  PRINT "YOUR CURRENT HAND LOOKS LIKE THIS:"
350  HTAB 1: VTAB 10
360  FOR N = 1 TO PN
370  PRINT P(N); SPC( 2)
380 PT = PT + P(N)
390  NEXT N
400  IF PT > 21 THEN 640
410  HTAB 1: VTAB 12: CALL  - 868
420  PRINT "WANT ANOTHER CARD (Y/N)? ";
430  GET K$
440  IF K$ <  > "Y" THEN 470
```

```
450 PN = PN + 1:P(PN) =  INT (12 *  RND (1)) + 2
460  GOTO 320
470  IF K$ <  > "N" THEN 430
480  IF PT = 21 OR  INT (4 *  RND (1)) = 0 THEN 560
490  IF DT <  = 21 AND  ABS (21 - DT) <  ABS (21 - PT) THEN 560
500 DT = D(1)
510  FOR N = 2 TO DN
520 D(N) =  INT (12 *  RND (1)) + 2
530 DT = DT + D(N)
540  NEXT N
550  GOTO 490
560  HTAB 1: VTAB 14: PRINT B$
570  HTAB 1: VTAB 16
580  PRINT "YOU HAVE "PT"."
590  PRINT "DEALER HAS "DT"."
600  IF DT > 21 THEN 690
610  IF DT = PT THEN 720
620  IF  ABS (21 - DT) <  ABS (21 - PT) THEN 720
630  GOTO 690
640  HTAB 1: VTAB 12: CALL  - 868
650  HTAB 14
660  FLASH : PRINT "** BUSTED **"
670  FOR N = 1 TO 4: CALL  - 198: NEXT N
680  NORMAL : GOTO 720
690  HTAB 14: VTAB 19
700  INVERSE : PRINT "** YOU WIN **"
710  NORMAL : GOTO 750
720  HTAB 11: VTAB 19
730  INVERSE : PRINT "** DEALER WINS **"
740  NORMAL : GOTO 750
750  HTAB 1: VTAB 22
760  PRINT "WANT TO PLAY ANOTHER HAND (Y/N)? ";
770  GET K$
780  IF K$ = "Y" THEN 170
790  IF K$ = "N" THEN  HOME : END
800  GOTO 770
```

Program 46 PRESIDENTS QUIZ

"The buck stops here."

—President Harry S. Truman

This is a legitimate self-teaching program. No kidding—it really is.

```
10  REM  ** U.S. PRESIDENTS QUIZ **
20  REM
30  FOR N = 1 TO 10:M$ = M$ +  CHR$ (32): NEXT N
40 M$ = M$ + "U.S. PRESIDENTS QUIZ" +  CHR$ (13)
50  FOR N = 1 TO 40:M$ = M$ + "*": NEXT N
60  DIM I$(40)
70  FOR N = 1 TO 40
80  READ F,I$(N)
90  NEXT N
100 TN =  INT (39 *  RND (1)) + 1
110 TN$ = I$(TN)
120 Q$(1) = I$(TN + 1)
130 C = 0
140  FOR N = 1 TO 3
150 Q$(N + 1) = I$( INT (40 *  RND (1)) + 1)
160 C = C + 1: IF C < 20 THEN 190
170  HTAB 1: VTAB 3
180  PRINT "PLEASE WAIT ...": CALL  - 958
190  IF Q$(N + 1) = TN$ THEN 150
200  FOR X = 1 TO N
210  IF Q$(N + 1) = Q$(X) THEN 150
220  NEXT X
230  NEXT N
240 R$(5) = "NONE OF THE ABOVE"
250  FOR N = 1 TO 4
260 R$(N) = Q$( INT (4 *  RND (1)) + 1)
270  IF N = 1 THEN 310
280  FOR X = 1 TO N - 1
290  IF R$(X) = R$(N) THEN 260
300  NEXT X
310  NEXT N
320  HOME : PRINT M$
330  PRINT "WHICH ONE IMMEDIATELY SUCCEEDED"
340  PRINT "PRESIDENT "TN$"?"
350  PRINT
360  FOR N = 1 TO 5
370  PRINT  TAB( 5);N" - "R$(N)
380  NEXT N
390  PRINT
400  GET K$
410 NG = NG + 1
420  IF K$ < "1" OR K$ > "5" THEN 400
430 K =  VAL (K$)
440  IF R$(K) = Q$(1) THEN 470
450  PRINT "THAT IS INCORRECT."
460  GOSUB 490: GOTO 130
470  PRINT "THAT IS CORRECT."
```

```
480 NC = NC + 1: GOSUB 490: GOTO 100
490  HTAB 1: VTAB 16
500  INVERSE
510 S =  INT (100 * NC / NG)
520  PRINT "YOU HAVE "NC" CORRECT OUT OF "NG; SPC( 30 -  POS (0))
530  PRINT
540  PRINT "FOR A SCORE OF "S"%" SPC( 30 -  POS (0))
550  PRINT : NORMAL
560  HTAB 1: VTAB 21
570  PRINT "STRIKE THE SPACE BAR TO CONTINUE"
580  PRINT "(OR THE X KEY TO END THIS QUIZ) ...";
590  GET K$
600  IF K$ =  CHR$ (32) THEN  RETURN
610  IF K$ = "X" THEN  END
620  GOTO 590
630  REM
640  DATA  1,GEORGE WASHINGTON
650  DATA  2,JOHN ADAMS
660  DATA  3,THOMAS JEFFERSON
670  DATA  4,JAMES MADISON
680  DATA  5,JAMES MONROE
690  DATA  6,JOHN QUINCY ADAMS
700  DATA  7,ANDREW JACKSON
710  DATA  8,MARTIN VAN BUREN
720  DATA  9,WILLIAM H. HARRISON
730  DATA  10,JOHN TYLER
740  DATA  11,JAMES K. POLK
750  DATA  12,ZACHARY TAYLOR
760  DATA  13,MILLARD FILLMORE
770  DATA  14,FRANKLIN PIERCE
780  DATA  15,JAMES BUCHANAN
790  DATA  16,ABRAHAM LINCOLN
800  DATA  17, ANDREW JACKSON
810  DATA  18,ULYSSES S. GRANT
820  DATA  19,RUTHERFORD B. HAYES
830  DATA  20,JAMES A. GARFIELD
840  DATA   21,CHESTER A. ARTHUR
850  DATA  22,GROVER CLEVELAND
860  DATA  23,BENJAMIN HARRISON
870  DATA  24,GROVER CLEVELAND
880  DATA  25,WILLIAM MCKINLEY
890  DATA  26,THEODORE ROOSEVELT
900  DATA  27,WILLIAM H. TAFT
910  DATA  28,WOODROW WILSON
920  DATA  29, WARREN G. HARDING
930  DATA  30,CALVIN COOLIDGE
940  DATA  31,HERBERT C. HOOVER
950  DATA  32,FRANKLIN D. ROOSEVELT
960  DATA  33,HARRY S. TRUMAN
970  DATA  34,DWIGHT D. EISENHOWER
980  DATA  35,JOHN F. KENNEDY
990  DATA  36,LYNDON B. JOHNSON
1000  DATA  37,RICHARD M. NIXON
1010  DATA  38, GERALD R. FORD
1020  DATA  39,JIMMY CARTER
1030  DATA  40,RONALD REAGAN
```

Program 47 STATES, CITIES, AND CAPITALS

"We pray for our leaders until we actually see them at work. Then we pray for our nation."

—Anonymous

This is an honest-to-goodness good program, too. Believe me—really, it is for sure.

```
10  REM  ** STATES, CAPITALS AND CITIES **
20  REM
30  FOR N = 1 TO 12:M$ = M$ +  CHR$ (32): NEXT N
40 M$ = M$ + "NAME THE CAPITAL" +  CHR$ (13)
50  FOR N = 1 TO 40:M$ = M$ + "*": NEXT N
60  TEXT : HOME : PRINT M$
70  DIM I$(50,4)
80  FOR X = 1 TO 50
90  READ N
100  FOR Y = 1 TO 4
110  READ I$(X,Y)
120  NEXT Y,X
130 X =  INT (50 *  RND (1)) + 1
140  FOR N = 1 TO 3:Q$(N) = I$(X,N + 1): NEXT N
150 Q$(4) = I$(50 *  RND (1) + 1,3 *  RND (1) + 2)
160  FOR N = 1 TO 3
170  IF Q$(4) = Q$(N) THEN 150
180  NEXT N
190 Q$(5) = "NONE OF THE ABOVE"
200 CR =  INT (4 *  RND (1)) + 1
210  FOR N = 1 TO 4
220 C = 0
230 R$(N) = Q$( INT (4 *  RND (4)) + 1)
240 C = C + 1: IF C < 10 THEN 270
250  HTAB 1: VTAB 3: PRINT "PLEASE WAIT ..."
260  CALL  - 958
270  IF N = 1 THEN 310
280  FOR Y = 1 TO N - 1
290  IF R$(Y) = R$(N) THEN 230
300  NEXT Y
310  NEXT N
320 R$(5) = Q$(5)
330  HOME : PRINT M$
340  PRINT "WHICH OF THE FOLLOWING IS THE CAPITAL"
350  PRINT "OF "I$(X,1)" (1-5)?"
360  PRINT
370  FOR N = 1 TO 5
380  PRINT  TAB( 5)N" - "R$(N)
390  NEXT N
400  PRINT
410  GET K$
420  IF K$ < "1" OR K$ > "5" THEN 410
430  PRINT K$
440 NT = NT + 1
```

```
450  IF R$( VAL (K$)) = I$(X,2) THEN 470
460  PRINT : PRINT "SORRY, THAT IS NOT CORRECT.": GOSUB 490: GOTO 140
470  PRINT : PRINT "THAT IS CORRECT."
480 NC = NC + 1: GOSUB 490: GOTO 130
490  INVERSE
500  HTAB 1: VTAB 17
510 SC =  INT (100 * NC / NT)
520  PRINT NC" CORRECT OUT OF "NT; SPC( 25 -  POS (0))
530  PRINT
540  PRINT "FOR A SCORE OF "SC"%" SPC( 25 -  POS (0))
550  NORMAL
560  HTAB 1: VTAB 20
570  PRINT "STRIKE THE SPACE BAR TO CONTINUE (OR"
580  PRINT "THE X KEY TO END THE QUIZ) ...";
590  GET K$
600  IF K$ =  CHR$ (32) THEN  RETURN
610  IF K$ = "X" THEN  END
620  GOTO 590
630  DATA  1,ALABAMA,MONTGOMERY,BIRMINGHAM,MOBILE
640  DATA  2,ALASKA,JUNEAU,ANCHORAGE,FAIRBANKS
650  DATA  3,ARIZONA,PHOENIX,TUCSON,FLAGSTAFF
660  DATA  4,ARKANSAS,LITTLE ROCK,EL DORADO,FORT SMITH
670  DATA  5,CALIFORNIA,SACRAMENTO,LOS ANGELES,SAN FRANCISCO
680  DATA  6,COLORADO,DENVER,COLORADO SPRINGS,PUEBLO
690  DATA  7,CONNECTICUT,HARTFORD,BRIDGEPORT,WATERBURY
700  DATA  8,DELAWARE,DOVER,MILFORD,NEW CASTLE
710  DATA  9,FLORIDA,TALLAHASSEE,JACKSONVILLE,MIAMI
720  DATA  10,GEORGIA,ATLANTA,MACON,SAVANNAH
730  DATA  11,HAWAII,HONOLULU,WAIPAHU,KANEOHE
740  DATA  12,IDAHO,BOISE,POCATELLO,IDAHO FALLS
750  DATA  13,ILLINOIS,SPRINGFIELD,CHICAGO,PEORIA
760  DATA  14,INDIANA,INDIANAPOLIS,FORT WAYNE,SOUTH BEND
770  DATA  15,IOWA,DES MOINES,CEDAR RAPIDS,SIOUX CITY
780  DATA  16,KANSAS,TOPEKA,KANSAS CITY,WICHITA
790  DATA  17,KENTUCKY,FRANKFORT,LOUISVILLE,LEXINGTON
800  DATA  18,LOUISIANA,BATON ROUGE,NEW ORLEANS,SHREVEPORT
810  DATA  19,MAINE,AUGUSTA,PORTLAND,BRUNSWICK
820  DATA  20,MARYLAND,ANNAPOLIS,BALTIMORE,SILVER SPRINGS
830  DATA  21,MASSACHUSETTS,BOSTON,NEW BEDFORD,SPRINGFIELD
840  DATA  22,MICHIGAN,LANSING,DETROIT,GRAND RAPIDS
850  DATA  23,MINNESOTA,ST. PAUL,MINNEAPOLIS,ROCHESTER
860  DATA  24,MISSISSIPPI,JACKSON,MERIDIAN,HATTIESBURG
870  DATA  25,MISSOURI,JEFFERSON CITY,ST. LOUIS,SPRINGFIELD
880  DATA  26,MONTANA,HELENA,BILLINGS,GREAT FALLS
890  DATA  27,NEBRASKA,LINCOLN,OMAHA,HASTINGS
900  DATA  28,NEVADA,CARSON CITY,LAS VEGAS,RENO
910  DATA  29,NEW HAMPSHIRE,CONCORD,MANCHESTER,CLAREMONT
920  DATA  30,NEW JERSEY,TRENTON,NEWARK,ATLANTIC CITY
930  DATA  31,NEW MEXICO,SANTE FE,ALBUQUERQUE,ALAMOGORDA
940  DATA  32,NEW YORK,ALBANY,NEW YORK,SYRACUSE
950  DATA  33,NORTH CAROLINA,RALEIGH,CHARLOTTE,WINSTON-SALEM
960  DATA  34,NORTH DAKOTA,BISMARCK,FARGO,MINOT
970  DATA  35,OHIO,COLUMBUS,CLEVELAND,CINCINNATI
980  DATA  36,OKLAHOMA,OKLAHOMA CITY,TULSA,MUSKOGEE
990  DATA  37,OREGON,SALEM,PORTLAND,EUGENE
1000  DATA  38,PENNSYLVANIA,HARRISBURG,PHILADELPHIA,PITTSBURGH
```

```
1010  DATA  39,RHODE ISLAND,PROVIDENCE,NEWPORT,WARWICK
1020  DATA  40,SOUTH CAROLINA,COLUMBIA,AUGUSTA,CHARLESTON
1030  DATA  41,SOUTH DAKOTA,PIERRE,SIOUX FALLS,RAPID CITY
1040  DATA  42,TENNESSEE,NASHVILLE,MEMPHIS,KNOXVILLE
1050  DATA  43,TEXAS,AUSTIN,HOUSTON,DALLAS
1060  DATA  44,UTAH,SALT LAKE CITY,PROVO,OGDEN
1070  DATA  45,VERMONT,MONTPELIER,BURLINGTON,RUTLAND
1080  DATA  46,VIRGINIA,RICHMOND,NORFOLK,VIRGINIA BEACH
1090  DATA  47,WASHINGTON,OLYMPIA,SEATTLE,SPOKANE
1100  DATA  48,WEST VIRGINIA,CHARLESTON,HUNTINGTON,PARKERSBURG
1110  DATA  49,WISCONSIN,MADISON,MILWAUKEE,GREEN BAY
1120  DATA  50,WYOMING,CHEYENNE,LARAMIE,CASPER
```

Program 48 DRAW

"Art is the highest form of flattery."

—Overheard in a reducing salon in Miami Beach

```
10  REM  ** DRAW PICTURES **
20  REM
30  TEXT : HOME
40  HTAB 8: VTAB 8
50  PRINT "SEE WHAT YOU CAN DRAW"
60  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
70  GET K$
80  GR
90  HOME
100  FOR N = 1 TO 40: PRINT "-";: NEXT N
110  PRINT "U=UP" SPC( 6)"D=DOWN" SPC( 6)"C=CHANGE COLOR"
120  PRINT "L=LEFT" SPC( 4)"R=RIGHT" SPC( 5)"X=END PROGRAM"
130 CL = 1
140 CH = 20:CV = 20
150  GOTO 260
160 K =  PEEK ( - 16384)
170  IF K < 128 THEN 160
180  POKE  - 16368,0
190  IF K = 213 AND CV > 0 THEN CV = CV - 1: GOTO 260
200  IF K = 196 AND CV < 38 THEN CV = CV + 1: GOTO 260
210  IF K = 204 AND CH > 0 THEN CH = CH - 1: GOTO 260
220  IF K = 210 AND CH < 39 THEN CH = CH + 1: GOTO 260
230  IF K = 195 THEN CL = CL + 1
240  IF CL > 15 THEN CL = 0
250  IF K = 216 THEN  TEXT : HOME : END
260  COLOR= CL
270  PLOT CH,CV
280  GOTO 160
```

Program 49 MASTERPIECE ART

"Modern art is what happens when painters stop looking at girls and persuade themselves they have a better idea."

—John Ciardi

```
20  REM   ** MASTERPIECE ART **
30  REM
40  FOR N = 1 TO 12:M$ = M$ +  CHR$ (32): NEXT N
50 M$ = M$ + "MASTERPIECE ART"
60  TEXT : HOME : PRINT M$: PRINT
70  PRINT : PRINT "THIS IS A VERY SOPHISTICATED PRO-"
80  PRINT "GRAM THAT GIVES ORDINARY COMPUTERS THE"
90  PRINT "POWER TO GENERATE MASTERPIECES OF ART"
100  PRINT "THAT RIVAL THOSE OF THE OLD MASTERS"
110  PRINT "OF THE PAST.": PRINT
120  PRINT "SIMPLY STRIKE THE SPACE BAR TO SEE"
130  PRINT "THIS WONDERFUL TECHNIQUE WORKING BE-"
140  PRINT "FORE YOUR VERY EYES."
150  VTAB 21: PRINT "STRIKE THE SPACE BAR NOW ...";
160  GET K$: IF K$ <  > " " THEN 160
170  GR
180  HOME : PRINT : PRINT M$
190  FOR X = 1 TO 38: FOR Y = 1 TO 38
200 C = 255 *  RND (1)
210  COLOR= C
220  PLOT X,Y
230  NEXT Y: NEXT X
240  HOME : PRINT "SEE THE ";
250  RESTORE
260  FOR N = 1 TO  INT (8 *  RND (1)) + 1
270  READ N$: NEXT N
280  PRINT N$"?"
290  VTAB 23
300  PRINT "STRIKE THE SPACE BAR TO PAINT ANOTHER"
310  PRINT "PICTURE, OR ANY OTHER KEY TO END...";
320  GET K$: IF K$ =  CHR$ (32) THEN 170
330  TEXT : HOME : END
340  DATA  DOGGIE,PRETTY LADY,KITTY CAT
350  DATA  CLOWN,MESSY BEDROOM,TASTY PIZZA
360  DATA  BEAUTIFUL MOUNTAINS, DEER BY THE CREEK
```

Program 50 WEATHER PREDICTOR

"Ditto, ditto, ditto . . ."

—Weather announcer in San Francisco

```
10  REM   ** WEATHER FORECASTER **
20  REM
30  FOR N = 1 TO 11:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 1 TO 40:Y$ = Y$ + "%": NEXT N
50 M$ = X$ + "WEATHER FORECASTER" +  CHR$ (13) + Y$
60 TT$ = "TEMPERATURE: "
70 PP$ = "PRECIPITATION (Y/N)? "
80  TEXT : HOME : PRINT M$
90  PRINT "THIS IS A WEATHER-FORECASTING PROGRAM"
100  PRINT "THAT IS SO ACCURATE THAT IT WILL PUT"
110  PRINT "SOME LOCAL WEATHERPERSONS OUT OF WORK."
120  PRINT
130  PRINT "THE PROGRAM REQUESTS SOME WEATHER"
140  PRINT "DATA FOR THE PAST THREE DAYS -- MAKE"
150  PRINT "SURE THAT YOU HAVE THE INFORMATION"
160  PRINT "AT HAND BEFORE STARTING.": PRINT
170  PRINT "IF YOU SUPPLY THE CORRECT SORT OF"
180  PRINT "DATA, THE COMPUTER WILL PREDICT"
190  PRINT "WEATHER FOR YOUR AREA."
200  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
210  GET K$: HOME : PRINT M$
220  PRINT : PRINT "ENTER TODAY'S WEATHER SUMMARY:": PRINT
230  PRINT  TAB( 5)TT$;
240  INPUT "";TT
250  PRINT  TAB( 5)PP$;
260  GET TP$
270  IF TP$ = "Y" OR TP$ = "N" THEN 290
280  GOTO 260
290  HOME : PRINT M$
300  PRINT : PRINT "ENTER YESTERDAY'S WEATHER SUMMARY:": PRINT
310  PRINT  TAB( 5)TT$;
320  INPUT "";YT
330  PRINT  TAB( 5)PP$;
340  GET YP$
350  IF YP$ = "Y" OR YP$ = "N" THEN 370
360  GOTO 340
370  HOME : PRINT M$
380  PRINT "WEATHER SUMMARY FOR THE DAY BEFORE"
390  PRINT "YESTERDAY:": PRINT
400  PRINT  TAB( 5)TT$;
410  INPUT "";DT
420  PRINT  TAB( 5)PP$;
430  GET DP$
440  IF DP$ = "Y" OR DP$ = "N" THEN 460
450  GOTO 430
460  HOME : PRINT M$
470 FT = (3 * TT + 2 * YT + DT) / 6
480 CP = 0
```

```
490  IF TP$ = "Y" THEN CP = CP + 50
500  IF YP$ = "Y" THEN CP = CP + 25
510  IF DP$ = "Y" THEN CP = CP + 13
520 CP = (10 *  RND (1) - 5) + CP
530 CP =  ABS (CP)
540  PRINT "WEATHER SUMMARY FOR THE NEXT TWO DAYS:": PRINT
550  PRINT : PRINT  TAB( 5)"TEMPERATURE:"
560  PRINT  TAB( 8)FT" DEGREES": PRINT
570  PRINT  TAB( 5)"CHANCE OF PRECIPITATION:"
580  PRINT  TAB( 8)CP"%"
590  VTAB 21: PRINT "THAT'S ALL, FOLKS.
600  END
```

Program 51 CRYSTAL BALL

If someone gives you so-called good advice, do the opposite; you can be sure it will be the right thing nine out of ten times.

—Anselm Feuerbach

```
10  REM  ** CRYSTAL BALL **
20  REM
30 M$ = "ELEMENTARY CRYSTAL BALL" +  CHR$ (13)
40  FOR K = 1 TO 40:Y$ = Y$ + "@": NEXT K
50 M$ = M$ + Y$
60  TEXT : HOME : PRINT M$
70  SPEED= 100
80  PRINT "AS GREAT AS COMPUTERS ARE, THEY'VE YET"
90  PRINT "TO BECOME THE MASTERS OF ALL VOCATIONS."
100  PRINT "THE CASE IN POINT IS A FORTUNE TELLER"
110  PRINT "AND HER CRYSTAL BALL.": PRINT
120  PRINT "THIS PROGRAM MARKS THE FIRST INTRUSION"
130  PRINT "INTO THE AGE-OLD PROFESSION. ITS OPER-"
140  PRINT "ATION IS LIMITED TO ANSWERING QUESTIONS"
150  PRINT "REQUIRING 'YES' OR 'NO' RESPONSES."
160  SPEED= 255
170  FOR T = 1 TO 2000: NEXT T
180  PRINT : FLASH
190  GOSUB 600
200  VTAB 18: PRINT "BUT IT IS A START!"
210  NORMAL
220  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
230  GET K$
240  DIM A$(4)
250  FOR K = 1 TO 4: READ A$(K): NEXT K
260  HOME : PRINT M$
270  VTAB 20: INVERSE
280  PRINT "ASK QUESTIONS THAT HAVE 'YES'OR 'NO'" SPC( 39 -  POS (0))
290  PRINT : PRINT "ANSWERS. AND PLEASE USE NO PUNCTUATION.";
300  PRINT  SPC( 39 -  POS (0))
310  NORMAL
320  HTAB 1: VTAB 6
330  PRINT "WHAT IS YOUR QUESTION?": PRINT
340  INPUT "";F$
350  IF  LEN (F$) < 1 THEN 340
360  IF  RIGHT$ (F$,1) = "?" THEN 380
370 F$ = F$ + "?"
380 N =  INT ( RND (1) * 4 + 1)
390  IF  LEN (F$) < 5 THEN  PRINT : PRINT "THAT'S A SHORT QUESTION."
400  IF  LEN (F$) > 25 THEN  PRINT : PRINT "THAT'S A LONG QUESTION."
410  FOR T = 1 TO 1500: NEXT T
420  PRINT : PRINT "I AM THINKING ON IT NOW ..."
430  FOR T = 1 TO 2000: NEXT T
440  GOSUB 600
450  HOME : PRINT M$
460  PRINT "YOUR QUESTION WAS:": PRINT
470  PRINT F$: PRINT Y$
```

```
480  SPEED= 50
490  PRINT "THE CRYSTAL BALL SAYS:": PRINT
500  FLASH : PRINT A$(N): NORMAL
510  SPEED= 255
520  FOR T = 1 TO 1500: NEXT T
530  HTAB 1: VTAB 21
540  PRINT "WANT TO PEER INTO THE CRYSTAL BALL"
550  PRINT "AGAIN (Y/N)? ";
560  GET K$: IF K$ = "Y" THEN 260
570  IF K$ <  > "N" THEN 560
580  HOME : END
590  DATA  YES,NO,MAYBE,I CAN'T HELP YOU
600  POKE  - 16304,0: POKE  - 16302,0
610  FOR V = 1 TO 20
620  POKE  - 16297,0
630  FOR T = 0 TO 10
640 X =  PEEK ( - 16336)
650  NEXT T
660  POKE  - 16298,0
670  NEXT V
680  TEXT : RETURN
```

Program 52 PRIVATE SHRINK

No one really listens to anyone else, and if you try it for a while, you'll see why.
—Mignon McLaughlin

```
10  REM  ** PRIVATE SHRINK **
20  REM
30  DIM N$(20)
40  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
50  FOR K = 1 TO 40:Y$ = Y$ + "=": NEXT K
60 M$ = M$ + "PRIVATE SHRINK" +  CHR$ (13)
70 M$ = M$ + Y$
80  TEXT : HOME : PRINT M$
90  HOME : PRINT M$
100  VTAB 21: PRINT Y$
110  PRINT "ENTER 'BUGOFF' TO END THE SESSION."
120  VTAB 4
130  PRINT  CHR$ (32);"WHAT'S ON YOUR MIND?"
140  FOR K = 1 TO 10:N$(K) = "": NEXT K
150  IF  PEEK (37) > 18 THEN  VTAB 4
160  CALL  - 868
170 WC = 1
180  GET K$
190  PRINT K$;
200  IF  POS (0) > 30 THEN  PRINT : GOTO 250
210  IF K$ =  CHR$ (13) THEN 250
220  IF K$ =  CHR$ (32) THEN WC = WC + 1:K$ = ""
230 N$(WC) = N$(WC) + K$
240  GOTO 180
250  FOR L = 1 TO WC
260  IF N$(1) = "BUGOFF" THEN 440
270  IF N$(L) = "WHY" THEN N$(L) = ""
280  IF N$(L) = "BECAUSE" THEN N$(L) = ""
290  IF N$(L) = "WHO" THEN N$(L) = "THEY"
300  IF N$(L) = "WHAT" THEN N$(L) = "THAT"
310  IF N$(L) = "I" THEN N$(L) = "YOU": GOTO 340
320  IF N$(L) = "YOU" THEN N$(L) = "ME"
330  IF N$(L) = "ME" THEN N$(L) = "YOU"
340  IF N$(L) = "ARE" THEN N$(L) = "AM": GOTO 360
350  IF N$(L) = "AM" THEN N$(L) = "ARE"
360  NEXT L
370  CALL  - 868
380  PRINT " WHY";
390  FOR L = 1 TO WC
400  PRINT  CHR$ (32);N$(L);
410  NEXT L
420  PRINT "?"
430  GOTO 140
440  HOME : PRINT M$
450  PRINT "THAT'S FINE WITH ME. I'LL SEND YOU THE"
460  PRINT "BILL TOMORROW."
470  VTAB 21: END
```

Program 53 ROBOT FLOOR PAINTER

Q: What did one fly say to the other when the man started painting the floor?
A: Wow. Let's make tracks.
—From *101 Ugly Things to do With a Punster* (unpublished manuscript)

```
10  REM  ** ROBOT FLOOR PAINTER **
20  REM
30  TEXT : HOME
40  PRINT "ROBOT FLOOR PAINTER"
50  FOR K = 1 TO 40: PRINT "%";: NEXT K
60  PRINT
70  PRINT "WHO SAYS ROBOTS ARE SMARTER THAN PEOPLE?
80  PRINT "THIS ONE CANNOT PAINT THE FLOOR IN A"
90  PRINT "ROOM WITHOUT EVENTUALLY SURROUNDING"
100  PRINT "ITSELF WITH WIDE AREAS OF WET PAINT."
110  PRINT : PRINT "THE THING IS FUN TO WATCH, THOUGH."
120  PRINT "IT CAN JUMP OVER NARROW AREAS OF PAINT,"
130  PRINT "AND IT IS SOMETIMES SURPRISING HOW MUCH"
140  PRINT "OF THE JOB IT CAN COMPLETE."
150  VTAB 21: PRINT "STRIKE ANY KEY TO START THE JOB ...";
160  GET K$
170  GR : HOME : GOSUB 370
180  VTAB 23: PRINT "ROBOT FLOOR PAINTER";
190 CH = 20:CV = 20:T = 0:NG = 0
200 I =  INT (5 *  RND (1)) - 2
210 J =  INT (5 *  RND (1)) - 2
220  IF I = 0 AND J = 0 THEN 200
230 T = T + 1: IF T > 100 THEN 440
240 NH = CH + I:NV = CV + J
250  IF  SCRN( NH,NV) <  > 0 THEN 200
260 G =  PEEK ( - 16336)
270 NG = NG + 1:T = 0
280  HTAB 1: VTAB 21
290  INVERSE : PRINT "COMPLETION: ";
300  PRINT  INT (100 * NG / 1290)"%"
310  COLOR= 13
320  PLOT CH,CV
330  COLOR= 9
340  PLOT NH,NV
350 CH = NH:CV = NV
360  GOTO 240
370  COLOR= 15
380 X = 0
390  FOR N = 0 TO 1: HLIN 0,39 AT N: NEXT N
400  FOR N = 38 TO 39: HLIN 0,39 AT N: NEXT N
410  FOR N = 0 TO 1: VLIN 0,39 AT N: NEXT N
420  FOR N = 38 TO 39: VLIN 0,39 AT N: NEXT N
430  RETURN
440  FOR N = 1 TO 5: CALL  - 198: NEXT N
450  NORMAL
460  VTAB 23
```

```
470  PRINT "STRIKE THE SPACE BAR TO TRY AGAIN"
480  PRINT "(OR THE X KEY TO TRY SOMETHING ELSE).";
490  GET K$
500  IF K$ = "X" THEN  TEXT : HOME : END
510  IF K$ =  CHR$ (32) THEN 170
520  GOTO 490
```

Program 54 ROBOT LAWNMOWER

The grass might look greener on the other side of the fence, but it grows faster on my side.

—From *A Treasury of Greatest Gripes* (unpublished)

```
10  REM  ** ROBOT LAWNMOWER **
20  REM
30 M$ = "ROBOT LAWNMOWER" +  CHR$ (13)
40  FOR N = 1 TO 40:M$ = M$ + "#": NEXT N
50  TEXT : HOME : PRINT M$
60  PRINT "IT IS SAFE TO SAY THAT ROBOTS WILL SOON"
70  PRINT "RELIEVE US OF THE TIRESOME CHORE OF"
80  PRINT "MOWING OUR LAWNS. THE ROBOT LAWN MOWER"
90  PRINT "DEMONSTRATED IN THIS PROGRAM ISN'T"
100  PRINT "PARTICULARLY EFFICIENT, BUT IT"
110  PRINT "EVENTUALLY DOES THE JOB."
120  PRINT
130  PRINT : PRINT "LEGENDS FOR THIS SIMULATION:": PRINT
140  PRINT "ORANGE -- THE ROBOT LAWNMOWER
150  PRINT "DARK GREEN -- UNCUT GRASS"
160  PRINT "LIGHT GREEN -- CUT GRASS"
170  PRINT "WHITE -- FENCE AROUND THE LAWN"
180  PRINT "YELLOW -- YOUR HOUSE"
190  PRINT "BLUE-GREEN -- STUFF THAT THE LAWN-"
200  PRINT  TAB( 5)"MOWER ISN'T SUPPOSED TO TOUCH"
210  VTAB 22: PRINT "STRIKE ANY KEY TO BEGIN ...";
220  GET K$
230  GR : HOME : GOSUB 390
240  VTAB 22: PRINT "STRIKE ANY KEY TO END THE SIMULATION ...";
250 CH = 20:CV = 20
260 I =  INT (5 *  RND (1)) - 2
270 J =  INT (5 *  RND (1)) - 2
280  IF I = 0 AND J = 0 THEN 260
290 NH = CH + I:NV = CV + J
300  IF  SCRN( NH,NV) > 12 THEN 260
310 G =  PEEK ( - 16336)
320  HTAB 1: VTAB 21
330  COLOR= 12: PLOT CH,CV
340  COLOR= 9: PLOT NH,NV
350 CH = NH:CV = NV
360 K =  PEEK ( - 16384): POKE  - 16368,0
370  IF K > 127 THEN  TEXT : HOME : END
380  GOTO 290
390  COLOR= 4
400  FOR N = 0 TO 39
410  VLIN 0,39 AT N
420  NEXT N
430  COLOR= 15
440  FOR N = 0 TO 1: HLIN 0,39 AT N: NEXT N
450  FOR N = 38 TO 39: HLIN 0,39 AT N: NEXT N
460  FOR N = 0 TO 1: VLIN 0,39 AT N: NEXT N
470  FOR N = 38 TO 39: VLIN 0,39 AT N: NEXT N
```

```
480  COLOR= 13
490  FOR N = 18 TO 22
500  VLIN 12,16 AT N
510  NEXT N
520  COLOR= 14
530  FOR N = 1 TO 12
540 W =  INT (36 *  RND (1)) + 2
550 Z =  INT (36 *  RND (1)) + 2
560  FOR X = W TO W + 3
570  FOR Y = Z TO Z + 3
580  IF  SCRN( X,Y) <  > 4 THEN 540
590  PLOT X,Y
600  NEXT Y,X,N
610  RETURN
```

Program 55 WALLPAPER SAMPLES

" 'nuff said."

—A full day's conversation overheard in Hooksett, New Hampshire

```
10  REM  ** WALLPAPER SAMPLES **
20  REM
30 M$ = "CUSTOM WALLPAPER SAMPLES" +  CHR$ (13)
40  FOR N = 1 TO 40:M$ = M$ + "=": NEXT N
50  TEXT : HOME : PRINT M$
60  PRINT "HI. WHAT'S YOUR FIRST NAME?"
70  INPUT "";N$
80  IF  LEN (N$) < 1 THEN 70
90  IF  RIGHT$ (N$,1) <  >  CHR$ (32) THEN 110
100 N$ =  RIGHT$ (N$, LEN (N$) - 1)
110  IF  LEN (P$) < 40 THEN P$ = N$ + P$: GOTO 110
120 P$ =  LEFT$ (P$,40)
130 N$ = N$ +  CHR$ (32)
140  IF  LEN (Q$) < 40 THEN Q$ = N$ + Q$: GOTO 140
150 Q$ =  LEFT$ (Q$,40)
160  VTAB 21: PRINT "STRIKE ANY KEY TO SEE YOUR CUSTOM"
170  PRINT "WALLPAPER SAMPLES ...";
180  GET K$
190  FOR C = 1 TO 6: FOR P = 0 TO 1
200  NORMAL : HOME : PRINT M$
210  IF P = 1 THEN  INVERSE
220  ON C GOSUB 260,310,360,470,580,640
230  NEXT P,C
240  NORMAL
250  HOME : END
260  FOR L = 4 TO 19
270  HTAB 12: VTAB L
280  PRINT  LEFT$ (P$,L - 3)
290  NEXT L
300  GOTO 700
310  FOR L = 8 TO 18
320  HTAB 12: VTAB L
330  PRINT  LEFT$ (P$,16)
340  NEXT L
350  GOTO 700
360  FOR L = 4 TO 19
370  HTAB 1: VTAB L
380  PRINT P$
390  NEXT L
400  FOR L = 5 TO 18
410  HTAB 12: VTAB L
420  FOR S = 1 TO L - 4
430  PRINT  CHR$ (32);
440  NEXT S,L
450  HTAB 1: VTAB 21
460  GOTO 700
470  FOR L = 4 TO 19
480  HTAB 1: VTAB L
```

```
490  PRINT P$
500  NEXT L
510  FOR L = 6 TO 16
520  HTAB 12: VTAB L
530  FOR S = 1 TO 16
540  PRINT  CHR$ (32);
550  NEXT S,L
560  HTAB 1: VTAB 21
570  GOTO 700
580  FOR L = 4 TO 19
590  HTAB 1: VTAB L
600  PRINT Q$
610  NEXT L
620  HTAB 1: VTAB 21
630  GOTO 700
640  HTAB 1: VTAB 4
650  PRINT Q$; CHR$ (32);
660  IF  PEEK (37) < 20 THEN 650
670  HTAB 1: VTAB  PEEK (37) + 1
680  FOR N = 1 TO 40: PRINT  CHR$ (32);: NEXT N
690  GOTO 700
700  FOR T = 1 TO 1500: NEXT T
710  CALL  - 198
720  RETURN
```

Program 56 DON'T TOUCH

"The only way to be rid of a temptation is to yield to it."

—Oscar Wilde

```
10  REM  ** DON'T TOUCH! **
20  REM
30 N = 1:X = 6: GOSUB 250
40 N = 2:X = 27: GOSUB 250
50 N = 3:X = 32: GOSUB 250
60  TEXT : HOME
70  HTAB 11: VTAB 8
80  FLASH : PRINT "DON'T TOUCH ANY KEY": NORMAL
90 K =  PEEK ( - 16384): IF K < 128 THEN 90
100  POKE  - 16368,0
110  FOR H = 1 TO 25
120  FOR T = 1 TO 150: NEXT T
130  CALL  - 198
140 X =  INT (8 *  RND (1))
150  HTAB 1
160  VTAB 22 *  RND (1) + 1: CALL  - 868
170  IF X > 5 THEN 200
180  HTAB 32 *  RND (1) + 1: PRINT M$(1);
190  NEXT H: GOTO 220
200  HTAB 11 *  RND (1) + 1: PRINT M$(2);
210  NEXT H
220  HTAB 1: VTAB 21
230  FLASH : PRINT M$(3): NORMAL
240  END
250  FOR Y = 1 TO X
260  READ D:M$(N) = M$(N) +  CHR$ (D)
270  NEXT Y
280  RETURN
290  DATA  72,65,45,72,65,46,73,32,75,78,69
300  DATA 87,32,89,79,85,32,67,79,85,76
310  DATA  68,78,39,84,32,82,69,83,73,83,84,33
320  DATA 77,65,67,72,73,78,69,83,32,65
330  DATA 82,69,32,83,85,80,69,82,73,79
340  DATA 82,32,84,79,32,72,85,77
350  DATA 65,78,83,33
```

Program 57 COMPUTER FIXER

He who is first to screw it up is often last to read the instructions.
—From *Wisdom of the Computer Age* (unpublished)

```
10  REM  ** COMPUTER FIXER **
20  REM
30  GOSUB 570
40  FOR X = 1 TO 2
50  HOME
60  FLASH : IF X = 2 THEN  NORMAL : INVERSE
70  FOR N = 1 TO 4
80  IF X = 1 THEN  CALL  - 198
90  PRINT M$(1) SPC( 2)
100  NEXT N
110  GOSUB 530
120  NEXT X
130  NORMAL
140  PRINT : PRINT M$(2): PRINT
150  GOSUB 530
160  SPEED= 100
170  PRINT M$(3)
180  PRINT M$(4) SPC( 1)M$(5)
190  PRINT M$(6)"!"
200  SPEED= 255
210  GOSUB 450
220  FOR N = 1 TO 4
230  GOSUB 360
240  FOR T = 1 TO 500
250  NEXT T,N
260  HTAB 1: VTAB 21
270  FLASH
280  PRINT M$(9) SPC( 1)M$(10);
290  FOR N = 1 TO 2: GOSUB 530: NEXT N
300  NORMAL
310  HTAB 1: VTAB 21: CALL  - 958
320 BX = BX + 1: IF BX < 3 THEN 210
330  HOME : PRINT "DONE"
340  PRINT : PRINT  CHR$ (93);
350  GOTO 350
360  POKE  - 16304,0: POKE  - 16302,0
370  FOR V = 1 TO 10
380  POKE  - 16297,0
390  FOR X = 0 TO 10
400 X =  PEEK ( - 16336)
410  NEXT X
420  POKE  - 16298,0
430  NEXT V
440  TEXT : RETURN
450  FOR N = 1 TO 8
460 CV = 10 *  RND (1) + 10:CH = 33 *  RND (1) + 1
470  HTAB 1: VTAB CV: CALL  - 868
480  HTAB CH: VTAB CV
```

```
490  PRINT M$(2 *  RND (1) + 7);"!"
500  GOSUB 540
510  NEXT N
520  RETURN
530  FOR T = 1 TO 1500: NEXT T: RETURN
540  FOR T = 1 TO 50 *  RND (1) + 30
550  IF T < 20 THEN G =  PEEK ( - 16336)
560  NEXT T: RETURN
570  READ M$(1)
580 X = 2:E = 8: GOSUB 680
590  READ M$(3)
600 X = 4:E = 17: GOSUB 680
610  READ M$(5)
620 X = 6:E = 11: GOSUB 680
630 X = 7:E = 7: GOSUB 680
640 X = 8:E = 5: GOSUB 680
650  READ M$(9)
660 X = 10:E = 11: GOSUB 680
670  RETURN
680  FOR N = 1 TO E
690  READ D
700 M$(X) = M$(X) +  CHR$ (D)
710  NEXT N
720  RETURN
730  DATA  ACHTUNG!
740  DATA 83,85,67,75,69,82,33,33
750  DATA  YOU'VE JUST STARTED A PROGRAM THAT
760  DATA 73,83,32,78,79,87,32,68,69,83
770  DATA 84,82,79,89,73,78,71
780  DATA  THIS COMPUTER
790  DATA 70,82,79,77,32,87,73,84,72,73,78
800  DATA 72,69,69,45,72,69,69
810  DATA 72,65,45,72,65
820  DATA  THAT IS ANOTHER MICROCHIP
830  DATA 66,69,73,78,71,32,70,82,73,69,68
```

Program 58 WHAT'S WRONG #1

In a few minutes a computer can make a mistake so great that it would take many men many months to equal it.

—Merele L. Meacham

```
10  REM  ** WHAT'S WRONG? **
20  REM
30  HOME : VTAB 12
40  FOR N = 32 TO 1 STEP  - 1
50  READ D: HTAB N: PRINT  CHR$ (D);
60  NEXT N
70  VTAB 21
80  DATA 87,72,65,84,32,73,83,32,87,82,79
90  DATA  78,71,32,87,73,84,72,32,84,72,73
100  DATA  83,32,80,82,79,71,82,65,77,63
```

Program 59 WHAT'S WRONG # 2

What's wrong? What's right? Wrong's right. Right's wrong. What's what? It's what . . .
—Overheard in a coffee house in Greenwich Village, *circa* 1957

```
10  REM  ** WHAT'S WRONG #2 **
20  REM
30  DIM Q(34)
40 M1$ = "Q: WHAT'S WRONG WITH THIS PROGRAM?
50  FOR N = 1 TO 34
60 Q(N) =  ASC ( MID$ (M1$,N,1))
70  NEXT N
80  HOME
90  FOR N = 1 TO 20
100  HTAB 17 + N: VTAB N
110  PRINT  CHR$ (Q(N))
120  NEXT N
130  FOR N = 1 TO 14
140  HTAB 18 + N: VTAB N + 3
150  PRINT  CHR$ (Q(N + 20))
160  NEXT N
170  CALL  - 198
180  SPEED= 50
190  FOR T = 1 TO 2500: NEXT T
200  FOR N = 1 TO 23
210 G =  PEEK ( - 16336)
220  HTAB 10 + N: VTAB N
230  READ D: PRINT  CHR$ (D);
240  NEXT N
250  FOR N = 1 TO 17
260 G =  PEEK ( - 16336)
270  HTAB 11 + N: VTAB N + 3
280  READ D: PRINT  CHR$ (D)
290  NEXT N
300  SPEED= 255
310  HTAB 1: VTAB 21: END
320  DATA 65,58,32,78,79,84,72,73,78,71,46,32,84
330  DATA 72,69,32,80,73,67,84,85,82,69,32,84,85
340  DATA 66,69,32,73,83,32,67,82,79,79,75,69,68,46
```

Program 60 SURROGATE CUSSER

$%^&**@

—Overheard at least 200 times daily in 70 different cities around the world.

```
10  REM  ** SURROGATE CUSSER **
20  REM
30  FOR K = 1 TO 12:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "SURROGATE CUSSER" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "EVERYONE GETS ANGRY AT SOMEONE OR SOME-"
80  PRINT "THING EVERY ONCE IN A WHILE. THERE'S"
90  PRINT "REALLY NOTHING WRONG WITH THAT. SOME"
100  PRINT "FOLKS, HOWEVER, ARE RELUCTANT TO EX-"
110  PRINT "PRESS THOSE FEELINGS, THEMSELVES."
120  PRINT : PRINT "COMPUTERS ARE SUPPOSED TO BE OUR"
130  PRINT "SERVANTS; AND THAT IS INDEED THE CASE"
140  PRINT "HERE."
150  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
160  GET K$
170  FOR K = 1 TO 4: READ W$(K): NEXT K
180  FOR K = 1 TO 4: READ A$(K): NEXT K
190  READ C$(1)
200  HOME : PRINT M$
210  PRINT "ARE YOU:": PRINT
220  PRINT  TAB( 5)"(1) A LITTLE BIT ANGRY"
230  PRINT  TAB( 5)"(2) SOMEWHAT ANGRY"
240  PRINT  TAB( 5)"(3) VERY ANGRY"
250  PRINT  TAB( 5)"(4) VERY, VERY ANGRY"
260  VTAB 14: PRINT "SELECT ONE: ";
270  GET K$: IF K$ < "1" OR K$ > "4" THEN 270
280  ON  VAL (K$) GOTO 290,390,470,560
290  GOSUB 730
300 N =  INT ( RND (1) * 4 + 1)
310 C$ = "":C$ = C$ + W$(N) + P$
320 N =  INT ( RND (1) * 4 + 1):C$ = C$ + A$(N)
330  PRINT : PRINT C$
340  HTAB 1: VTAB 21
350  PRINT "WOULD YOU LIKE MORE CUSSING (Y/N)? ";
360  GET K$: IF K$ = "Y" THEN 200
370  IF K$ <  > "N" THEN 360
380  HOME : END
390  GOSUB 730
400 N =  INT ( RND (1) * 4 + 1)
410 C$ = W$(N) +  CHR$ (32) + P$ +  CHR$ (32)
420 N =  INT ( RND (1) * 4 + 1)
430 C$ = C$ + A$(N)
440  PRINT : FLASH : PRINT C$: NORMAL
450 K = 7: GOSUB 840
460  GOTO 340
470  GOSUB 730
480  FLASH
```

```
490  FOR N = 1 TO 4 *  RND (1) + 3
500  PRINT C$(1) SPC( 1)P$ SPC( 1)C$(1)
510 K = 3: GOSUB 840
520  NEXT N
530  NORMAL
540 K = 5: GOSUB 840
550  GOTO 340
560  HOME : PRINT M$
570  PRINT "THIS ONE IS ESPECIALLY VULGAR. WOMEN"
580  PRINT "AND CHILDREN SHOULD LEAVE THE ROOM!"
590  PRINT : PRINT "STRIKE ANY KEY WHEN READY ..."
600  GET K$
610  PRINT : PRINT "ARE YOU REALLY READY FOR THIS (Y/N)? ";
620  GET K$: IF K$ = "N" THEN 340
630  IF K$ <  > "Y" THEN 620
640  HOME : PRINT M$
650  FOR N = 1 TO 32
660 Y =  RND (1): IF Y > .6 THEN  FLASH : GOTO 700
670  IF Y > .3 THEN  INVERSE : GOTO 700
680 B =  INT (Y * 10 + 1)
690 K = B: GOSUB 840
700  PRINT C$(1);: NORMAL
710  FOR T = 1 TO B * 25: NEXT T
720  NEXT N: GOTO 340
730  HOME : PRINT M$
740  PRINT "WHO OR WHAT IS THE OBJECT OF YOUR ANGER?"
750  PRINT
760  PRINT "(IF NO ONE OR NOTHING IN PARTICULAR,"
770  PRINT " SIMPLY STRIKE THE RETURN KEY.)"
780  PRINT : INPUT P$
790 P$ =  CHR$ (32) + P$ +  CHR$ (32)
800  HOME : PRINT M$: RETURN
810  DATA  DARN,DOGGONE,SHOOT,FIDDLESTICKS
820  DATA  JERK,MORON,WHIMP,IDIOT
830  DATA   #$%&(*#@!
840  FOR U = 1 TO K: CALL  - 198: NEXT U
850  RETURN
```

Program 61 ARROW SHOOT I

It is commonly known that Mr. Running "Quick-Draw" Silverhorse of Truth Or Consequences, New Mexico, holds the world record for the greatest number of arrows fired from a standard bow in 14 seconds: 28 of them. What is not so commonly known is his nickname: Old Scarfoot.

—From *Personal Accounts of the Ol' West* (unpublished)

```
10  REM  ** SIMPLE ARROW SHOOT (#1) **
20  REM
30  FOR N = 1 TO 39:B$ = B$ + "=": NEXT N
40  FOR N = 1 TO 17:C$ = C$ +  CHR$ (13): NEXT N
50 M$ = "ARROW SHOOT #1" +  CHR$ (13) + B$ + C$ + B$
60  TEXT : HOME
70  VTAB 12: PRINT  TAB( 13)"ARROW SHOOT #1"
80  HTAB 5: PRINT "A SIMPLE GAME FOR SIMPLE MINDS"
90  FOR T = 1 TO 2000: NEXT T
100  VTAB 23
110  FOR P = 1 TO 15
120  FOR T = 1 TO 50: NEXT T
130  PRINT : NEXT P
140  HOME : PRINT M$
150 FE$ = "ARROW":F$ = ">":CH = 1: GOSUB 720
160 FE$ = "TARGET":F$ = "*":CH = 39: GOSUB 720
170  HOME : PRINT M$
180  VTAB 4
190  PRINT "VERY GOOD. NOW, YOUR OBJECTIVE IS TO"
200  PRINT "SHOOT THE ARROW THING:"
210  CALL  - 198: PRINT
220  PRINT  TAB( 19)">": PRINT
230  FOR T = 1 TO 2000: NEXT T
240  PRINT "AT THE TARGET THING:"
250  CALL  - 198: PRINT
260  PRINT  TAB( 19)"*": PRINT
270  PRINT "UNDERSTAND?";
280  GET K$: IF K$ = "Y" THEN 320
290  IF K$ <  > "N" THEN 280
300  PRINT : PRINT "TOO BAD."
310  FOR T = 1 TO 2000: NEXT T
320  HOME : PRINT M$
330  HTAB 1: VTAB 20
340  PRINT "D KEY=ARROW DOWN" SPC( 6)
350  PRINT "U KEY=ARROW UP"
360  PRINT "SPACE BAR=FIRE ARROW" SPC( 2)
370  PRINT "RETURN KEY=QUIT"
380 TV =  INT (16 *  RND (1)) + 3
390  HTAB 40: VTAB TV
400  PRINT "*";
410  HTAB 1: VTAB 12: PRINT ">";
420 K =  PEEK ( - 16384): IF K < 128 THEN 420
430  POKE  - 16368,0
440 CH =  PEEK (36) + 1:CV =  PEEK (37) + 1
```

```
450  IF K = 213 AND CV > 3 THEN CV = CV - 1: GOTO 500
460  IF K = 196 AND CV < 18 THEN CV = CV + 1: GOTO 500
470  IF K = 160 THEN 530
480  IF K = 141 THEN  HOME : END
490  GOTO 420
500  HTAB 1: PRINT  CHR$ (32);
510  HTAB 1: VTAB CV: PRINT ">";
520  GOTO 420
530  FOR CH = 1 TO 39
540  HTAB CH: VTAB CV
550  PRINT  CHR$ (32)">";
560  IF CH < 10 THEN G =  PEEK ( - 16336)
570  NEXT CH
580  HTAB 1: VTAB 20: CALL  - 958
590  IF CV = TV THEN 660
600  HTAB 1: VTAB 21
610  INVERSE : PRINT "HOW COULD YOU MISS THAT TARGET??": NORMAL
620  PRINT
630  PRINT "THAT'S TERRIBLE."
640  FOR T = 1 TO 2000: NEXT T
650  GOTO 320
660  CALL  - 198
670  HTAB 1: VTAB 21
680  FLASH : PRINT "YOU GOT THE THING!": NORMAL
690  PRINT : PRINT "NO BIG DEAL -- BUT YOU DID IT RIGHT,"
700  PRINT "ANYHOW.";
710  GOTO 640
720  HTAB 1: VTAB 20: PRINT "THIS THING IS YOUR "FE$"."
730  CALL  - 958
740  FOR N = 1 TO 4
750  FOR CV = 3 TO 17
760  FOR T = 1 TO 10: NEXT T
770  HTAB CH: VTAB CV: PRINT  CHR$ (32)
780  HTAB CH: PRINT F$;
790  NEXT CV
800  FOR CV = 17 TO 3 STEP  - 1
810  FOR T = 1 TO 10: NEXT T
820  HTAB CH: VTAB CV + 1: PRINT  CHR$ (32);
830  HTAB CH: VTAB CV: PRINT F$;
840  NEXT CV
850  NEXT N
860  HTAB 1: VTAB 22: PRINT "UNDERSTAND (Y/N)?";
870  GET K$: IF K$ = "N" THEN 720
880  IF K$ <  > "Y" THEN 870
890  RETURN
```

Program 62 ARROW SHOOT II

He shot a little arrow into the sky,
The thing came down and got 'im in the eye.
The bad news, though, came from his physician,
Sorry, kid; no more stereoscopic vision.

—From *Modern American Poetry and Conundrums*

```
10  REM  ** ARROW SHOOT #2 **
20  REM
30  FOR N = 1 TO 39:B$ = B$ + "=": NEXT N
40  FOR N = 1 TO 17:C$ = C$ +  CHR$ (13): NEXT N
50 M$ = "ARROW SHOOT #2" +  CHR$ (13) + B$ + C$ + B$
60  TEXT : HOME
70  VTAB 12: PRINT  TAB( 13)"ARROW SHOOT #2"
80  HTAB 5: PRINT "A TRICKY GAME FOR SIMPLE MINDS"
90  FOR T = 1 TO 2000: NEXT T
100  VTAB 23
110  FOR P = 1 TO 15
120  FOR T = 1 TO 50: NEXT T
130  PRINT : NEXT P
140  HOME : PRINT M$
150  HTAB 1: VTAB 20
160  PRINT "D KEY=ARROW DOWN" SPC( 6)
170  PRINT "U KEY=ARROW UP"
180  PRINT "SPACE BAR=FIRE ARROW" SPC( 2)
190  PRINT "RETURN KEY=QUIT"
200 TH = 39:TV = 12:DF = 0
210 AH = 1:AV =  INT (16 *  RND (1)) + 3
220 TI = 1:SF = 0
230  GOSUB 480
240  GOSUB 340
250  IF SF = 1 THEN 310
260 K =  PEEK ( - 16384): POKE  - 16368,0
270  IF K = 213 OR K = 196 THEN  GOSUB 480
280  IF K = 141 THEN  HOME : END
290  IF K = 160 THEN SF = 1
300  GOTO 320
310  GOSUB 540
320  IF DF = 1 THEN 140
330  GOTO 240
340 TD = TD + 1: IF TD < 5 THEN 470
350 TD = 0
360  IF TV < 17 AND TV > 3 THEN 380
370 TI = TI * ( - 1)
380  HTAB TH: VTAB TV: PRINT  CHR$ (32)
390  HTAB TH: PRINT  CHR$ (32);
400 TV = TV + TI
410  IF TI > 0 THEN 450
420  HTAB TH: VTAB TV + 1: PRINT  CHR$ (32);
430  HTAB TH: VTAB TV: PRINT "*";
440  GOTO 470
```

```
450  HTAB TH: VTAB TV: PRINT  CHR$ (32)
460  HTAB TH: PRINT "*";
470  RETURN
480  HTAB AH: VTAB AV: PRINT  CHR$ (32)
490  IF K = 213 AND AV > 3 THEN AV = AV - 1: GOTO 510
500  IF K = 196 AND AV < 18 THEN AV = AV + 1: GOTO 510
510  HTAB AH: VTAB AV: PRINT  CHR$ (32);
520  HTAB AH: VTAB AV: PRINT ">";
530  RETURN
540  IF AH = 1 THEN 560
550  IF AH > 39 THEN 610
560  HTAB AH: VTAB AV
570  IF AH < 10 THEN G =  PEEK ( - 16336)
580  PRINT  CHR$ (32);">";
590 AH = AH + 1
600  RETURN
610  HTAB 1: VTAB 20: CALL  - 958
620  IF AV = TV AND  ABS (AH - TH) < 2 THEN 640
630  PRINT "YOU MISSED IT.": GOTO 660
640  CALL  - 198: PRINT "YOU GOT THE LITTLE SUCKER."
650  PRINT : PRINT "NICE SHOOTING.";
660  FOR T = 1 TO 2000: NEXT T
670  POKE  - 16368,0
680 DF = 1: RETURN
```

Program 63 ARROW SHOOT III

OK. So you shoot an arrow at the target. It goes half way. Right. Then it goes half the rest of the way. Right? Then it goes half the rest of the way again. Right? It never gets there. Right?

—Zeno (paraphrased)

```
10  REM  ** ARROW SHOOT #3 **
20  REM
30  FOR N = 1 TO 39:B$ = B$ + "=": NEXT N
40  FOR N = 1 TO 17:C$ = C$ +  CHR$ (13): NEXT N
50 M$ = "ARROW SHOOT #3" +  CHR$ (13) + B$ + C$ + B$
60  TEXT : HOME
70  VTAB 12: PRINT  TAB( 13)"ARROW SHOOT #3"
80  HTAB 4: PRINT "A LITTLE GAME FOR MUDDLED MINDS"
90  FOR T = 1 TO 2000: NEXT T
100  VTAB 23
110  FOR P = 1 TO 15
120  FOR T = 1 TO 50: NEXT T
130  PRINT : NEXT P
140  HOME : PRINT M$
150  HTAB 1: VTAB 20
160  PRINT "D KEY=ARROW DOWN" SPC( 6)
170  PRINT "U KEY=ARROW UP"
180  PRINT "SPACE BAR=FIRE ARROW" SPC( 2)
190  PRINT "RETURN KEY=QUIT"
200 TH = 39:TV = 12:DF = 0
210 AH = 1:AV =  INT (16 *  RND (1)) + 3
220 TI = 1:SF = 0
230 DI =  - 1:DH = 36:DV = 12
240  GOSUB 500
250  GOSUB 360
260  GOSUB 760
270  IF SF = 1 THEN 330
280 K =  PEEK ( - 16384): POKE  - 16368,0
290  IF K = 213 OR K = 196 THEN  GOSUB 500
300  IF K = 141 THEN  HOME : END
310  IF K = 160 THEN SF = 1
320  GOTO 340
330  GOSUB 560
340  IF DF = 1 THEN 140
350  GOTO 250
360 TD = TD + 1: IF TD < 2 THEN 490
370 TD = 0
380  IF TV < 17 AND TV > 3 THEN 400
390 TI = TI * ( - 1)
400  HTAB TH: VTAB TV: PRINT  CHR$ (32)
410  HTAB TH: PRINT  CHR$ (32);
420 TV = TV + TI
430  IF TI > 0 THEN 470
440  HTAB TH: VTAB TV + 1: PRINT  CHR$ (32);
450  HTAB TH: VTAB TV: PRINT "*";
460  GOTO 490
```

```
470  HTAB TH: VTAB TV: PRINT  CHR$ (32)
480  HTAB TH: PRINT "*";
490  RETURN
500  HTAB AH: VTAB AV: PRINT  CHR$ (32)
510  IF K = 213 AND AV > 3 THEN AV = AV - 1: GOTO 530
520  IF K = 196 AND AV < 18 THEN AV = AV + 1: GOTO 530
530  HTAB AH: VTAB AV: PRINT  CHR$ (32);
540  HTAB AH: VTAB AV: PRINT ">";
550  RETURN
560  IF AH < DH - 1 THEN 590
570  IF AV = DV AND  ABS (AH - DH) < 2 THEN 640
580  IF AH > 39 THEN 640
590  HTAB AH: VTAB AV
600  IF AH < 10 THEN G =  PEEK ( - 16336)
610  PRINT  CHR$ (32);">";
620 AH = AH + 1
630  RETURN
640  HTAB 1: VTAB 20: CALL  - 958
650  IF AV = DV AND  ABS (AH - DH) < 2 THEN 710
660  IF AV = TV AND  ABS (AH - TH) < 2 THEN 680
670  PRINT "YOU MISSED IT.": GOTO 730
680  CALL  - 198: PRINT "YOU GOT THE LITTLE SUCKER."
690  PRINT : PRINT "NICE SHOOTING.";
700  GOTO 730
710  PRINT "YOU SHOT ANOTHER HUNTER!"
720  PRINT "REPORT IMMEDIATELY TO THE LOCAL SHERIFF."
730  FOR T = 1 TO 2500: NEXT T
740  POKE  - 16368,0
750 DF = 1: RETURN
760  IF DV < 17 AND DV > 3 THEN 780
770 DI = DI * ( - 1)
780  HTAB DH: VTAB DV: PRINT  CHR$ (32)
790  HTAB DH: PRINT  CHR$ (32);
800 DV = DV + DI
810  IF DI > 0 THEN 850
820  HTAB DH: VTAB DV + 1: PRINT  CHR$ (32);
830  HTAB DH: VTAB DV: PRINT "!";
840  GOTO 870
850  HTAB DH: VTAB DV: PRINT  CHR$ (32)
860  HTAB DH: PRINT "!";
870  RETURN
```

Program 64 ARROW SHOOT IV

There's a lollipop born every minute.

—P.T. Barnum's Uncle Ed

```
10  REM  ** ARROW SHOOT #4 **
20  REM
30  FOR N = 1 TO 39:B$ = B$ + "=": NEXT N
40  FOR N = 1 TO 17:C$ = C$ +  CHR$ (13): NEXT N
50 M$ = "ARROW SHOOT #4" +  CHR$ (13) + B$ + C$ + B$
60  TEXT : HOME
70  VTAB 12: PRINT  TAB( 13)"ARROW SHOOT #4"
80  HTAB 5: PRINT "A TRICKY GAME FOR SIMPLE MINDS"
90  FOR T = 1 TO 2000: NEXT T
100  VTAB 23
110  FOR P = 1 TO 15
120  FOR T = 1 TO 50: NEXT T
130  PRINT : NEXT P
140  HOME : PRINT M$
150  HTAB 1: VTAB 20
160  PRINT "D KEY=ARROW DOWN" SPC( 6)
170  PRINT "U KEY=ARROW UP"
180  PRINT "SPACE BAR=FIRE ARROW" SPC( 2)
190  PRINT "RETURN KEY=QUIT"
200 TH = 39:TV = 12:DF = 0
210 AH = 1:AV =  INT (16 *  RND (1)) + 3
220 TI = 1:SF = 0
230  GOSUB 480
240  GOSUB 340
250  IF SF = 1 THEN 310
260 K =  PEEK ( - 16384): POKE  - 16368,0
270  IF K = 213 OR K = 196 THEN  GOSUB 480
280  IF K = 141 THEN  HOME : END
290  IF K = 160 THEN SF = 1
300  GOTO 320
310  GOSUB 540
320  IF DF = 1 THEN 140
330  GOTO 240
340 TD = TD + 1: IF TD < 5 THEN 470
350 TD = 0
360  IF TV < 17 AND TV > 3 THEN 380
370 TI = TI * ( - 1)
380  HTAB TH: VTAB TV: PRINT  CHR$ (32)
390  HTAB TH: PRINT  CHR$ (32);
400 TV = TV + TI
410  IF TI > 0 THEN 450
420  HTAB TH: VTAB TV + 1: PRINT  CHR$ (32);
430  HTAB TH: VTAB TV: PRINT "*";
440  GOTO 470
450  HTAB TH: VTAB TV: PRINT  CHR$ (32)
460  HTAB TH: PRINT "*";
470  RETURN
480  HTAB AH: VTAB AV: PRINT  CHR$ (32)
```

```
490  IF K = 213 AND AV > 3 THEN AV = AV - 1: GOTO 510
500  IF K = 196 AND AV < 18 THEN AV = AV + 1: GOTO 510
510  HTAB AH: VTAB AV: PRINT  CHR$ (32);
520  HTAB AH: VTAB AV: PRINT ">";
530  RETURN
540  IF AH = 1 THEN 560
550  IF AH > 39 THEN 610
560  HTAB AH: VTAB AV
570  IF AH < 10 THEN G =  PEEK ( - 16336)
580  PRINT  CHR$ (32);">";
590 AH = AH + 1
600  RETURN
610  HTAB 1: VTAB 20: CALL  - 958
620  IF AV = TV AND  ABS (AH - TH) < 2 THEN 670
630  PRINT "YOU MISSED IT."
640  FOR T = 1 TO 2000: NEXT T
650  POKE  - 16368,0
660 DF = 1: RETURN
670  CALL  - 198
680  FOR AH = AH - 1 TO 1 STEP  - 1
690  VTAB AV: HTAB AH
700  PRINT "<" +  CHR$ (32);
710  NEXT AH
720  HTAB 1: VTAB 20: CALL  - 958
730  FOR N = 1 TO 4: CALL  - 198: NEXT N
740  PRINT "OUCH! *&$$#@$"
750  GOTO 640
```

Program 65 GENETIC EXPERIMENTS

The many slight differences which appear in the offspring from the same parents, or which it may be presumed have thus arisen, from being observed in the individuals of the same species inhabiting the same confined locality, may be called individual differences.

—Charles Darwin in *The Origin of Species*

```
10  REM  ** GENETIC EXPERIMENTS **
20  REM
30  FOR K = 1 TO 10:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "GENETIC EXPERIMENTS" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "THIS PROGRAM OFFERS YOU A CHANCE TO"
80  PRINT "CONDUCT SOME AWARD-WINNING EXPERIMENTS"
90  PRINT "IN GENETIC CROSS-BREEDING."
100  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
110  GET K$
120  HOME : PRINT M$
130  PRINT "ENTER A SPECIES (MALE):"
140  INPUT "";LM$
150  IF  LEN (LM$) < 1 THEN 140
160  PRINT : PRINT "ENTER A SPECIES (FEMALE):"
170  INPUT "";F$
180  IF  LEN (F$) < 1 THEN 170
190 W$ =  LEFT$ (LM$,2) +  RIGHT$ (F$,3)
200  PRINT : PRINT "CROSS THEM THAT WAY, AND YOU GET:"
210  INVERSE : PRINT W$: NORMAL
220  PRINT : PRINT : PRINT "WOULD YOU LIKE TO SWITCH THE MALE AND"
230  PRINT "FEMALE SPECIES (Y/N)?";
240  GET K$: IF K$ = "N" THEN 310
250  IF K$ = "Y" THEN 270
260  GOTO 240
270 W$ =  LEFT$ (F$,3) +  RIGHT$ (LM$,2)
280  PRINT : PRINT
290  PRINT "CROSS THEM THAT WAY, AND YOU GET:"
300  INVERSE : PRINT W$: NORMAL
310  HTAB 1: VTAB 21: PRINT "WOULD YOU LIKE TO TRY A NEW"
320  PRINT "EXPERIMENT (Y/N)?";
330  GET K$: IF K$ <  > "N" AND K$ <  > "Y" THEN 310
340  IF K$ = "Y" THEN 120
350  END
```

Program 66 GOPHER HUNT

Go-go Gophers

—Sign on a pest control truck in Kokomo
—Sign on a frat house in Duluth

```
10  REM   ** GOPHER HUNT **
20  REM
30  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "GOPHER HUNT" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ +  CHR$ (42)
60  NEXT K
70  TEXT : HOME : PRINT : PRINT M$
80  PRINT "THIS PROGRAM GIVES YOU A CHANCE TO"
90  PRINT "PRACTICE CATCHING GOPHERS IN A LAWN."
100  PRINT "THE PESKY LITTLE CRITTERS POP UP HERE"
110  PRINT "AND THERE, AND YOU NEVER KNOW WHERE."
120  PRINT : PRINT "YOU CAN CHASE THE GOPHERS BY WORKING"
130  PRINT "THE U, D, L AND R KEYS (UP, DOWN, LEFT"
140  PRINT "AND RIGHT)."
150  PRINT : PRINT "THERE'S A CATCH TO CATCHING A GOPHER,
160  PRINT "THOUGH:  EVERY TIME YOU CATCH ONE"
170  PRINT "OF THEM, THEY GIVE YOU FEWER MOVES"
180  PRINT "FOR CATCHING THE NEXT."
190  HTAB 1: VTAB 20
200  PRINT "STRIKE ANY KEY TO BEGIN ...";
210  GET K$
220  GR : COLOR= 12
230  FOR N = 0 TO 39: VLIN 0,39 AT N: NEXT N
240  COLOR= 15
250 LEV = 50:SC = 0
260 R = 20:C = 20: PLOT C,R
270  GOSUB 510
280  GOSUB 430
290  COLOR= 12: PLOT C,R
300  COLOR= 15
310  IF K = 204 THEN C = C - 1
320  IF K = 210 THEN C = C + 1
330  IF K = 196 THEN R = R + 1
340  IF K = 213 THEN R = R - 1
350  IF C > 38 THEN C = 38
360  IF C < 1 THEN C = 1
370  IF R > 38 THEN R = 38
380  IF R < 1 THEN R = 1
390  IF GX = C AND GY = R THEN  GOSUB 510
400 COUNT = COUNT - 1
410  IF COUNT = 0 THEN 580
420  COLOR= 15: PLOT C,R: GOTO 280
430  HTAB 1: VTAB 22
440  PRINT "U=UP" SPC( 6)"D=DOWN" SPC( 6)"SCORE="SC - 1
450  PRINT "R=RIGHT" SPC( 3)"L=LEFT" SPC( 6)"MOVES TO GO="COUNT"  "
460 XX =  PEEK ( - 16336)
470 K =  PEEK ( - 16384)
```

```
480  IF K < 128 THEN 470
490  POKE  - 16368,0
500  RETURN
510 GX =  INT ( RND (1) * 35 + 1)
520 GY =  INT ( RND (1) * 35 + 1)
530  CALL  - 198
540 SC = SC + 1
550  COLOR= 9: PLOT GX,GY
560 COUNT = LEV:LEV = LEV - 3
570  RETURN
580  TEXT : HOME : VTAB 3: PRINT M$
590 SC = SC - 1
600  VTAB 6: PRINT "YOU HAVE CAPTURED "SC" GOPHER(S)."
610  PRINT
620  PRINT "THE BEST SERIES SCORE IS "TS" GOPHER(S)."
630  IF TS < SC THEN  PRINT  TAB( 5)"(YOU'VE DONE BETTER)"
640  IF TS > SC THEN  PRINT  TAB( 5)"(YOU'VE DONE WORSE)"
650  IF SC > TS THEN TS = SC
660  PRINT : PRINT "WOULD YOU LIKE TO PLAY AGAIN (Y/N)? ";
670  GET K$
680  IF K$ = "Y" THEN 220
690  IF K$ = "N" THEN  HOME : END
700  GOTO 670
```

Program 67 PARACHUTE JUMPER

If at first you don't succeed, try and try again.

—Someone who has no sky-diving friends

```
10  REM  ** PARACHUTE JUMPER **
20  REM
30 M$ = ""
40  FOR K = 1 TO 16:GM$ = GM$ + " ": NEXT K
50 GM$ =  CHR$ (13) + GM$ + "* GERONIMO *"
60 FU = 0
70  FOR K = 1 TO 12:M$ = M$ + " ": NEXT K
80 M$ = M$ + "PARACHUTE JUMPER" +  CHR$ (13)
90  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
100  TEXT : HOME : PRINT M$
110  PRINT "YOU ARE AN ACE SKYDIVER. YOUR MISSION"
120  PRINT "IS TO DROP INTO A CITY TO SAVE SOME"
130  PRINT "STOLEN PLUTONIUM.": PRINT
140  PRINT "IT IS UP TO YOU TO SIGNAL THE PILOT"
150  PRINT "THAT YOU ARE READY TO JUMP BY STRIKING"
160  PRINT "THE SPACE BAR.": PRINT
170  PRINT "IF YOU FAIL TO JUMP AT THE CORRECT"
180  PRINT "MOMENT, YOU WILL SMASH INTO A BUILDING."
190  PRINT "OR IF YOU FAIL TO JUMP AT ALL, THE"
200  PRINT "PLANE WILL RUN OUT OF FUEL, AND YOU"
210  PRINT "WILL ALL PERISH."
220  VTAB 21: PRINT "STRIKE THE SPACE BAR TO BEGIN ...";
230  GET K$
240 BD = 1
250  HOME : GR
260 BD = BD + 1: IF BD = 4 THEN BD = 1
270  IF BD = 1 THEN SK = 0
280  IF BD = 2 THEN SK = 7
290  IF BD = 3 THEN SK = 9
300  COLOR= SK
310  FOR Y = 0 TO 39: HLIN 0,39 AT Y: NEXT Y
320  HTAB 1
330  PRINT " *** HIT THE SPACE BAR TO JUMP *** "
340 DH = 0:NH = 0
350 FL = 0
360  COLOR= 117
370  FOR P = 1 TO 39
380 H =  INT ( RND (1) * 20 + 20)
390  VLIN H,39 AT P
400  NEXT P
410  COLOR= SK
420  VLIN 0,39 AT 18
430  COLOR= 2: PLOT 18,39
440  COLOR= 14:V = 10
450  FOR H = 0 TO 39
460  GOSUB 860
470  COLOR= 4: PLOT H,V
480  IF FL <  > 1 THEN 520
```

```
490  IF DH < 10 THEN  COLOR= 14: GOTO 510
500  COLOR= 13
510  PLOT NH,V + DH
520  FOR T = 1 TO 200: NEXT T
530  COLOR= SK: PLOT H,V
540  PLOT NH,V + DH
550 KB =  PEEK ( - 16384): POKE  - 16368,0
560  IF FL = 1 THEN 580
570  IF KB = 160 THEN FL = 1:R = H: GOSUB 900
580  IF FL = 1 THEN DH = H - R
590  IF DH < 10 THEN NH = H
600 CLK =  PEEK ( - 16336)
610 U =  SCRN( NH,V + DH + 1)
620  IF U = 2 OR U = 1 THEN 770
630  IF U = 5 THEN 720
640  NEXT H
650 H = 1
660 FU = FU + 1
670  IF FU < 2 THEN 450
680  IF FU <  > 2 THEN 710
690  HOME : PRINT "** YOU'RE LOW ON FUEL **"
700  GOTO 450
710  IF FU = 3 THEN FL = 1: GOSUB 900: GOTO 450
720  TEXT : HOME : PRINT M$
730  CALL ( - 198): CALL ( - 198)
740  PRINT : PRINT "*** SPLAT ***"
750  PRINT : PRINT "YOU JUST HIT A BUILDING"
760  GOTO 810
770  TEXT : HOME : PRINT M$
780  FOR T = 1 TO 6: CALL ( - 198): NEXT T
790  PRINT "** CONGRATULATIONS, ACE ***"
800  PRINT : PRINT "YOU SAVED THE PLUTONIUM"
810  VTAB 21
820  PRINT "WOULD YOU LIKE ANOTHER MISSION (Y/N)? ";
830  GET K$: IF K$ = "Y" THEN 250
840  IF K$ = "N" THEN  HOME : END
850  GOTO 830
860  COLOR= 2
870  IF H / 2 =  INT (H / 2) THEN  COLOR= 1
880  PLOT 18,39
890  RETURN
900  HOME : PRINT GM$: FOR S = 1 TO 3: CALL ( - 198): NEXT S
910 FU = 0
920 R = H:DH = H - R
930  IF DH < 10 THEN NH = H
940  RETURN
```

Program 68 LIFEGUARD

Tall lifeguards don't have to know how to swim.

—Lazarus Long (paraphrased)

```
10  REM   ** LIFEGUARD **
20  REM
30 M$ = ""
40  FOR K = 1 TO 15:M$ = M$ +  CHR$ (32): NEXT K
50 M$ = M$ + "LIFEGUARD" +  CHR$ (13)
60  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
70  HOME : PRINT M$
80  PRINT "YOU ARE A LIFEGUARD AT THE OL' SWIMMING"
90  PRINT "HOLE. A SWIMMER IS DROWNING, AND YOU"
100  PRINT "ARE ABOUT TO GO TO THE RESCUE."
110  PRINT : PRINT "THE ONLY PROBLEM IS THAT THE SWIMMER IS"
120  PRINT "UNDERWATER MOST OF THE TIME. YOU HAVE"
130  PRINT "TO SWIM IN ONE DIRECTION OR ANOTHER,"
140  PRINT "AND LISTEN FOR THE SCREAMS FOR HELP."
150  PRINT "THE GREATER THE NUMBER OF SCREAMS, THE"
160  PRINT "CLOSER YOU ARE (AT THE MOMENT)."
170  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
180  GET K$
190  HOME : PRINT M$: PRINT
200  PRINT "WHERE IS THE SWIMMER?": PRINT
210  PRINT "(EAST,WEST,NORTH,SOUTH,ROCK):";
220  INPUT K$
230 K$ =  LEFT$ (K$,1)
240 P =  INT ( RND (1) * 5 + 1)
250  IF K$ <  > "N" THEN 300
260  IF P = 1 THEN 500
270  IF P = 2 THEN L = 1: GOTO 590
280  IF P < 4 THEN L = 2: GOTO 590
290 L = 3: GOTO 590
300  IF K$ <  > "S" THEN 350
310  IF P = 2 THEN 500
320  IF P = 1 THEN L = 1: GOTO 590
330  IF P = 3 THEN L = 2: GOTO 590
340 L = 3: GOTO 590
350  IF K$ <  > "E" THEN 400
360  IF P = 3 THEN 500
370  IF P = 2 THEN L = 1: GOTO 590
380  IF P = 1 THEN L = 2: GOTO 590
390 L = 3: GOTO 590
400  IF K$ <  > "W" THEN 450
410  IF P = 4 THEN 500
420  IF P = 5 THEN L = 1: GOTO 590
430  IF P > 3 THEN L = 2: GOTO 590
440 L = 3: GOTO 590
450  IF K$ <  > "R" THEN 210
460  IF P = 5 THEN 500
470  IF P = 4 THEN L = 1: GOTO 590
480  IF P = 3 THEN L = 2: GOTO 590
```

```
490 L = 3: GOTO 590
500  HOME : PRINT M$
510  FOR K = 1 TO 5: CALL ( - 198): NEXT K
520  PRINT : PRINT "GOOD JOB.  YOU JUST SAVED THE"
530  PRINT "SWIMMER'S LIFE."
540  VTAB 21: PRINT "ARE YOU STILL ON DUTY (Y/N)?";
550  GET K$
560  IF K$ = "Y" THEN 190
570  IF K$ <  > "N" THEN 550
580  HOME : END
590  HOME : PRINT M$: PRINT
600  FOR J = 1 TO 5 - L
610  PRINT " HELP": PRINT : CALL ( - 198)
620  NEXT J
630  GOTO 200
```

Program 69 COMPUTERIZED HOME STATUS

The more we have to do with computers, the more we can know about matters of lesser importance.

—Anonymous (by choice)

```
10  REM  ** HOME STATUS REPORTS **
20  REM
30  DIM H$(11)
40 M$ = "COMPUTERIZED HOME STATUS REPORT" +  CHR$ (13)
50  FOR N = 1 TO 40:M$ = M$ + "-": NEXT N
60  FOR X = 1 TO 3: FOR N = 1 TO 5
70  ON X GOTO 80,90,100
80  READ A$(N): GOTO 110
90  READ B$(N): GOTO 110
100  READ C$(N)
110  NEXT N,X
120  FOR X = 1 TO 4: FOR N = 1 TO 2
130  ON X GOTO 140,150,160,170
140  READ D$(N): GOTO 180
150  READ E$(N): GOTO 180
160  READ F$(N): GOTO 180
170  READ G$(N): GOTO 180
180  NEXT N,X
190  FOR N = 1 TO 11
200  READ H$(N)
210 H$(N) = "TOO " + H$(N)
220  NEXT N
230 DL = 4000
240  FOR CY = 1 TO 5
250  GOSUB 630
260 DL = DL - 100
270  FOR T = 1 TO DL
280  NEXT T,CY
290  GOSUB 970
300  FOR CY = 1 TO 10
310  GOSUB 630: GOSUB 550
320 DL = DL - 200
330  FOR T = 1 TO DL
340  NEXT T,CY
350  GOSUB 970
360  FOR CY = 1 TO 5
370  FOR X = 1 TO 2
380 D$(X) = H$( INT (11 *  RND (1)) + 1)
390  NEXT X
400  GOSUB 630: GOSUB 550
410 DL = DL - 300
420  FOR T = 1 TO DL
430  NEXT T,CY
440 DL = DL - 500
450  GOSUB 970
460 BX = BX + 1
470  IF BX < 2 THEN 240
```

```
480  FOR BX = 1 TO 4
490  CALL  - 198: GOSUB 970
500  NEXT BX
510  FLASH : PRINT "ARRGH! I'M DEAD"
520  NORMAL : END
530  GOSUB 970
540  GOTO 240
550  FOR N = 1 TO 5
560  PRINT C$(N);
570 X =  INT (2 *  RND (1)) + 1
580 Y =  INT (11 *  RND (1)) + 1
590  HTAB 17: PRINT E$(X);
600  HTAB 28: PRINT H$(Y)
610  NEXT N
620  RETURN
630  TEXT : HOME : PRINT M$
640  VTAB 6
650  FOR N = 1 TO 5
660 X =  INT (2 *  RND (1)) + 1
670 Y = 2: IF X = 2 THEN Y =  INT (2 *  RND (1)) + 1
680  PRINT A$(N);
690  NORMAL
700  IF X = 1 THEN  INVERSE
710  HTAB 17: PRINT D$(X);
720  NORMAL
730  IF X = 2 AND Y = 2 THEN  FLASH
740  HTAB 28: PRINT E$(Y)
750  NORMAL
760  NEXT N
770  FOR N = 1 TO 5
780 X =  INT (2 *  RND (1)) + 1
790 Y = 2: IF X = 1 THEN Y =  INT (2 *  RND (1)) + 1
800  PRINT B$(N);
810  NORMAL
820  IF X = 1 THEN  INVERSE
830  HTAB 17: PRINT F$(X);
840  NORMAL
850  IF X = 1 AND Y = 2 THEN  CALL  - 198: FLASH
860  HTAB 28: PRINT G$(Y)
870  NORMAL
880  NEXT N
890  RETURN
900  DATA  FRONT DOOR,BACK DOOR,BEDROOM WINDOW,KITCHEN WINDOW
910  DATA  GARAGE DOOR,DISHWASHER,CLOTHES WASHER,CLOTHES DRYER
920  DATA  FURNACE,AIR CONDITIONER,TOILET,TELEPHONE
930  DATA  KITCHEN SINK,CHRISTMAS TREE,FAMILY DOG
940  DATA  OPEN,CLOSED,LOCKED,UNLOCKED,ON,OFF,RUNNING
950  DATA  NOT RUNNING,OK,HOT,COLD,HIGH,LOW,WET,DRY
960  DATA  QUIET,NOISY,SHALLOW,DEEP
970  POKE  - 16304,0: POKE  - 16302,0
980  FOR F = 1 TO 10
990  POKE  - 16297,0
1000  FOR G = 0 TO 10
1010 X =  PEEK ( - 16336)
1020  NEXT G
1030  POKE  - 16298,0
1040  NEXT F
1050  TEXT : RETURN
```

Program 70 SCISSORS-PAPER-STONE

Cut! Cover! Break! We must protect our children from engaging in games that even simulate such violence!

—Editorial in a newspaper dated January 4, 1823

```
10  REM  ** PAPER-SCISSORS-STONE **
20  REM
30  FOR K = 1 TO 10:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "SCISSORS-PAPER-STONE" +  CHR$ (13)
50  FOR K = 1 TO 40:Y$ = Y$ + "*": NEXT K
60 M$ = M$ + Y$
70  FOR N = 1 TO 3: READ D$:C$(N) = D$: NEXT N
80  FOR N = 1 TO 4: READ D$:R$(N) = D$: NEXT N
90 CC = 0
100  TEXT : HOME : PRINT M$
110  PRINT "CHOOSE A MATERIAL (1,2,OR 3):"
120  PRINT
130  FOR N = 1 TO 3
140  PRINT  TAB( 5)N"-"C$(N)
150  NEXT N
160  VTAB 12
170  GET K$: IF K$ < "1" OR K$ > "3" THEN 170
180 PN =  VAL (K$)
190 SN =  INT (3 *  RND (1)) + 1
200  HTAB 1: VTAB 12
210  PRINT Y$
220  PRINT "YOU PICKED "C$(PN)
230  PRINT "THE COMPUTER PICKS "C$(SN)
240  PRINT : FOR T = 1 TO 1000: NEXT T
250  ON SN GOTO 260,290,320
260  IF PN = 1 THEN  PRINT R$(1): GOTO 370
270  IF PN = 2 THEN  PRINT R$(3);: GOTO 350
280  IF PN = 3 THEN  PRINT R$(2);: GOTO 360
290  IF PN = 1 THEN  PRINT R$(3);: GOTO 360
300  IF PN = 2 THEN  PRINT R$(1): GOTO 370
310  IF PN = 3 THEN  PRINT R$(4);: GOTO 350
320  IF PN = 1 THEN  PRINT R$(2);: GOTO 350
330  IF PN = 2 THEN  PRINT R$(4);: GOTO 360
340  IF PN = 3 THEN  PRINT R$(1): GOTO 370
350  PRINT " - YOU WIN.":PC = PC + 1: GOTO 370
360  PRINT " - COMPUTER WINS.":CC = CC + 1
370  VTAB 21: PRINT "STRIKE THE SPACE BAR TO DO AGAIN"
380  PRINT "(OR THE X KEY TO END THE GAME) ...";
390  GET K$
400  IF K$ = "X" THEN 430
410  IF K$ =  CHR$ (32) THEN 100
420  GOTO 390
430  HOME : PRINT M$: PRINT
440  PRINT "YOU WON "PC" TIME";
450  IF PC <  > 1 THEN  PRINT "S";
460  PRINT : PRINT "THE COMPUTER WON "CC" TIME";
470  IF CC <  > 1 THEN  PRINT "S"
```

```
480  END
490  DATA  PAPER,SCISSORS,STONE
500  DATA  TIE,PAPER COVERS STONE
510  DATA  SCISSORS CUT PAPER,STONE SMASHES SCISSORS
```

Program 71 HELP-HELP

Facts require explanation; truth defies it.

—Anonymous

User's Note: It's up to you to decide whether this seemingly innocent program requires explanation or defies it.

```
10  REM  ** HELP,HELP **
20  REM
30  FOR K = 1 TO 18:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "HELP" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  HOME : PRINT M$
70  SPEED= 80
80  FOR K = 1 TO 66
90  READ L: PRINT  CHR$ (L);
100  NEXT K
110  SPEED= 255: VTAB 21: END
120  DATA 72,69,76,80,44,32,72,69,76,80,33,33
130  DATA  32,73,39,77,32,65,32,80,82,73,83,79,78
140  DATA 69,82,32,73,78,32,65,32,80,73,67
150  DATA 84,85,82,69,45,84,85,66,69,32,70,65,67
160  DATA 84,79,82,89,46,32,76,69,84,32,77,69
170  DATA 32,79,85,84,33
```

Program 72 WUMPUS

Stand still, you wascle wabbit!

—Elmer Fudd

```
10  REM  ** WUMPUS **
20  REM
30  FOR N = 1 TO 17:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 1 TO 40:Y$ = Y$ + ":": NEXT N
50 M$ = X$ + "WUMPUS" +  CHR$ (13) + Y$
60  HOME : PRINT M$
70  PRINT "WUMPUS IS A HUNTING GAME WHEREBY YOU"
80  PRINT "ATTEMPT TO CAPTURE A STRANGE SORT OF"
90  PRINT "BEAST -- NAMELY, A WUMPUS."
100  PRINT : PRINT "YOU HAVE A HIGH-TECH RANGEFINDER TO"
110  PRINT "DETERMINE HOW FAR AWAY THE WUMPUS IS."
120  PRINT "YOU HAVE TO USE YOUR HUNTERS' INSTINCT,"
130  PRINT "HOWEVER, TO RECKON THE DIRECTION."
140  PRINT : PRINT "CATCH THE WUMPUS -- IF YOU CAN."
150  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
160  GET K$
170 N = 0
180 WX =  INT (100 *  RND (1)) - 50
190 WY =  INT (100 *  RND (1)) - 50
200 PX = 0:PY = 0
210  HOME : PRINT M$: VTAB 4
220 DI =  SQR ((WX - PX) * (WX - PX) + (WY - PY) * (WY - PY))
230 DI =  INT (DI)
240  IF DI > 1 THEN 340
250  HOME : PRINT M$: VTAB 4
260 M1$ = "YOU HAVE CAPTURED THE WUMPUS."
270  FLASH : PRINT M1$
280  FOR XN = 1 TO 4: CALL  - 198: NEXT XN
290  FOR T = 1 TO 500: NEXT T
300  NORMAL : HOME : PRINT M$: PRINT M1$
310  PRINT : PRINT "YOU DID IT IN "N" MOVE";
320  IF N <  > 1 THEN  PRINT "S."
330  GOTO 520
340  PRINT "YOU ARE NOW "DI" MILES FROM THE WUMPUS."
350  PRINT : PRINT "HOW FAR WOULD YOU LIKE TO TRAVEL";
360  INPUT TD
370 TD =  INT ( ABS (DT))
380  PRINT : PRINT "WHICH DIRECTION (N,S,E,W)?";
390 CH =  PEEK (36):CV =  PEEK (37)
400  HTAB 1: VTAB 21
410  PRINT "STRIKE THE X KEY TO GIVE UP"
420  HTAB CH + 1: VTAB CV + 1
430  GET D$
440  IF D$ = "N" THEN PY = PY + DI: GOTO 500
450  IF D$ = "S" THEN PY = PY - DI: GOTO 500
460  IF D$ = "E" THEN PX = PX + DI: GOTO 500
470  IF D$ = "W" THEN PX = PX - DI: GOTO 500
480  IF D$ = "X" THEN 570
```

```
490  GOTO 420
500 N = N + 1
510  GOTO 210
520  VTAB 21: PRINT "STRIKE THE SPACE BAR TO PLAY AGAIN
530  PRINT "(OR THE X KEY TO END THE PROGRAM)";
540  GET K$
550  IF  ASC (K$) = 32 THEN 170
560  IF K$ <  > "X" THEN 540
570  HOME : END
```

Program 73 SUPER WUMPUS

Eh-h-h. Catch me if you can!

—Bugs Bunny

```
10  REM  ** SUPER WUMPUS **
20  REM
30  FOR N = 1 TO 14:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 1 TO 40:Y$ = Y$ + ":": NEXT N
50 M$ = X$ + "SUPER WUMPUS" +  CHR$ (13) + Y$
60  HOME : PRINT M$
70  PRINT "WUMPUS IS A HUNTING GAME WHEREBY YOU"
80  PRINT "ATTEMPT TO CAPTURE A STRANGE SORT OF"
90  PRINT "BEAST -- NAMELY, A WUMPUS."
100  PRINT : PRINT "YOU HAVE A HIGH-TECH RANGEFINDER TO"
110  PRINT "DETERMINE HOW FAR AWAY THE WUMPUS IS."
120  PRINT "YOU HAVE TO USE YOUR HUNTERS' INSTINCT,"
130  PRINT "HOWEVER, TO RECKON THE DIRECTION."
140  PRINT "NOTICE -- SUPER WUMPUS IS A LITTLE "
150  PRINT "HARDER TO CATCH THAN THE OTHER WUMPUS"
160  PRINT "BECAUSE HE MOVES AROUND IN HIS WORLD!"
170  PRINT : PRINT "CATCH THE SUPER WUMPUS -- IF YOU CAN."
180  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
190  GET K$
200 N = 0
210 WX =  INT (100 *  RND (1)) - 50
220 WY =  INT (100 *  RND (1)) - 50
230 PX = 0:PY = 0
240  HOME : PRINT M$: VTAB 4
250 DI =  SQR ((WX - PX) * (WX - PX) + (WY - PY) * (WY - PY))
260 DI =  INT (DI)
270  IF DI > 1 THEN 370
280  HOME : PRINT M$: VTAB 4
290 M1$ = "YOU HAVE CAPTURED THE WUMPUS."
300  FLASH : PRINT M1$
310  FOR NX = 1 TO 4: CALL  - 198: NEXT N
320  FOR T = 1 TO 500: NEXT T
330  NORMAL : HOME : PRINT M$: PRINT M1$
340  PRINT : PRINT "YOU DID IT IN "N" MOVE";
350  IF N > 1 THEN  PRINT "S."
360  GOTO 550
370  PRINT "YOU ARE NOW "DI" MILES FROM THE WUMPUS."
380  PRINT : PRINT "HOW FAR WOULD YOU LIKE TO TRAVEL";
390  INPUT TD
400 TD =  INT ( ABS (TD))
410  PRINT : PRINT "WHICH DIRECTION (N,S,E,W)?";
420 CH =  PEEK (36):CV =  PEEK (37)
430  HTAB 1: VTAB 21
440  PRINT "STRIKE THE X KEY TO GIVE UP"
450  HTAB CH + 1: VTAB CV + 1
460  GET D$
470  IF D$ = "N" THEN PY = PY + DI: GOTO 530
480  IF D$ = "S" THEN PY = PY - DI: GOTO 530
490  IF D$ = "E" THEN PX = PX + DI: GOTO 530
```

```
500  IF D$ = "W" THEN PX = PX - DI: GOTO 530
510  IF D$ = "X" THEN 600
520  GOTO 450
530 N = N + 1
540  GOTO 210
550  VTAB 21: PRINT "STRIKE THE SPACE BAR TO PLAY AGAIN"
560  PRINT "(OR THE X KEY TO END THE PROGRAM)";
570  GET K$
580  IF  ASC (K$) = 32 THEN 200
590  IF K$ <  > "X" THEN 570
600  HOME : END
```

Program 74 CROSS THE RIVER

There's more than one way to skin a cat, mash a spider, and spit in the river; and you only gotta be smart to do two of 'em.

—From *Forgotten Lore of the Mississippi*

```
10  REM  ** RIVER CROSSING **
20  REM
30  FOR K = 1 TO 13:M$ = M$ +  CHR$ (32)
40 M$ = M$ + "RIVER CROSSING" +  CHR$ (13)
50  FOR K = 1 TO 40:Y$ = Y$ + "*": NEXT K
60 M$ = M$ + Y$
70  FOR N = 1 TO 7: READ D$(N): NEXT N
80  TEXT : HOME : PRINT M$
90  PRINT "CONSIDER THIS PROBLEM IN LOGIC:": PRINT
100  PRINT "YOU ARE ON THE NORTH BANK OF A RIVER."
110  PRINT "YOU HAVE A BOAT,WOLF,HEAD OF CABBAGE"
120  PRINT "AND A GOAT WITH YOU. WHEN YOU AREN'T"
130  PRINT "AROUND, THE GOAT WILL EAT THE CABBAGE"
140  PRINT "AND THE WOLF WILL EAT THE GOAT."
150  PRINT
160  PRINT "YOUR TASK IS TO USE THE BOAT TO CARRY"
170  PRINT "THE WOLF,CABBAGE AND GOAT TO THE"
180  PRINT "SOUTH BANK -- CARRYING JUST ONE (OR"
190  PRINT "NONE) WITH YOU ON EACH CROSSING."
200  PRINT : PRINT "LET ME KNOW IF YOU CAN DO IT IN LESS"
210  PRINT "THAN 7 CROSSINGS."
220  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
230  GET K$
240 GT = 1:HC = 1:WF = 1:LF = 1:NC = 0
250 FB$ = D$(1)
260 FB = 1
270  HOME : PRINT M$
280  IF FB = 1 THEN FB$ = D$(1)
290  IF FB = 2 THEN FB$ = D$(2)
300  VTAB 4
310  PRINT "ITEMS ON THE NORTH BANK:": PRINT
320  IF WF = 1 THEN  PRINT  TAB( 5)D$(3)
330  IF HC = 1 THEN  PRINT  TAB( 5)D$(4)
340  IF GT = 1 THEN  PRINT  TAB( 5)D$(5)
350  PRINT : PRINT "ITEMS ON THE SOUTH BANK:": PRINT
360  IF WF = 2 THEN  PRINT  TAB( 5)D$(3)
370  IF HC = 2 THEN  PRINT  TAB( 5)D$(4)
380  IF GT = 2 THEN  PRINT  TAB( 5)D$(5)
390  HTAB 1: VTAB 16: INVERSE
400  PRINT "YOU ARE ON THE "FB$" BANK."
410  NORMAL
420  VTAB 18: PRINT Y$
430  ON LF GOTO 440,670,680,690
440  PRINT "DO YOU WANT TO TAKE THE (G)OAT, (W)OLF,"
450  PRINT "THE (C)ABBAGE, OR GO (A)LONE?";
460  GET K$
470  HTAB 1: VTAB 15: PRINT  SPC( 39)
```

```
480 NC = NC + 1
490  IF K$ <  > "G" THEN 530
500  IF GT <  > FB THEN 750
510 GT = GT + 1: IF GT > 2 THEN GT = 1
520  GOTO 620
530  IF K$ <  > "W" THEN 570
540  IF WF <  > FB THEN 750
550 WF = WF + 1: IF WF > 2 THEN WF = 1
560  GOTO 620
570  IF K$ <  > "C" THEN 610
580  IF HC <  > FB THEN 750
590 HC = HC + 1: IF HC > 2 THEN HC = 1
600  GOTO 620
610  IF K$ <  > "A" THEN 270
620 FB = FB + 1: IF FB > 2 THEN FB = 1
630  IF HC = 2 AND WF = 2 AND GT = 2 THEN LF = 2
640  IF GT = WF AND FB <  > GT THEN LF = 3
650  IF GT = HC AND FB <  > GT THEN LF = 4
660  GOTO 270
670  PRINT "YOU DID IT IN "NC" CROSSINGS!": GOTO 700
680  PRINT D$(6): GOTO 700
690  PRINT D$(7)
700  CALL ( - 198): CALL ( - 198)
710  PRINT : PRINT "WOULD YOU LIKE TO PLAY AGAIN (Y/N)?";
720  GET K$: IF K$ = "Y" THEN 240
730  IF K$ = "N" THEN  HOME : END
740  GOTO 720
750  HTAB 1: VTAB 15: FLASH
760  PRINT "THAT'S NOT POSSIBLE";
770  NORMAL : PRINT  SPC( 39 -  POS (0))
780  GOTO 390
790  DATA  NORTH,SOUTH,WOLF,CABBAGE,GOAT
800  DATA   THE WOLF ATE THE GOAT.
810  DATA   THE GOAT ATE THE CABBAGE.
```

Program 75 FOOTBALL

Turn out the lights, the party's over . . .

—ABC's Don Meredith (variation of an older theme)

```
10  REM  ** FOOTBALL **
20  REM
30  FOR K = 1 TO 16:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "FOOTBALL" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  READ S$(1),S$(2)
70  TEXT : HOME : PRINT M$
80  PRINT "YOU ARE THE HEAD COACH OF A PROFESSION-"
90  PRINT "AL FOOTBALL TEAM.  YOUR OPPONENT'S"
100  PRINT "COACH IS YOUR COMPUTER.": PRINT
110  PRINT "WHEN EITHER OF YOU HAVE THE BALL, YOU"
120  PRINT "HAVE THE OPTIONS OF RUNNING, PASSING"
130  PRINT "OR KICKING BALL. (A KICK MAY BE A PUNT"
140  PRINT "OR FIELD GOAL ATTEMPT."
150  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN THE GAME ...";
160  GET K$
170  HOME : PRINT M$
180  FOR K = 1 TO 5: CALL ( - 198): NEXT K
190  PRINT "AND NOW FOR THE TOSS OF THE COIN:": PRINT
200  PRINT "YOU CALL IT -- (H)EADS OR (T)AILS ";
210  GET K$
220  IF  NOT (K$ = "H" OR K$ = "T") THEN 210
230  IF  RND (1) <  = .5 THEN 260
240  HTAB 1: VTAB 8
250  PRINT "YOU WON THE TOSS.": GOTO 320
260  HTAB 1: VTAB 8
270  PRINT "THE COMPUTER WON THE TOSS, AND"
280  PRINT "ELECTS TO RECEIVE."
290 FL = 1
300  FOR T = 1 TO 2500: NEXT T
310  GOTO 360
320  PRINT "DO YOU WANT TO (K)ICK OR (R)ECEIVE? ";
330 FL = 1
340  GET K$: IF K$ = "R" THEN FL = 0: GOTO 360
350  IF K$ <  > "K" THEN 340
360 PS = 0:CS = 0:DN = 1:YD = 20
370 YG = 10:YL = 20
380 TL = 60
390  IF TL < 0 THEN 1030
400  FOR DN = 1 TO 4
410 TL = TL - 1
420  HOME : NORMAL : PRINT M$
430  PRINT  SPC( 12)"SCOREBOARD"
440  PRINT
450  PRINT "YOU HAVE "PS" PTS  COMPUTER HAS "CS" PTS"
460  PRINT
470  PRINT "DOWN="DN"  YDS TO GO="YG
```

```
480  PRINT
490  IF FL = 1 THEN 530
500  IF YL > 50 THEN R = 100 - YL: PRINT S$(1) SPC( 1)R" YARDLINE"
510  IF YL <  = 50 THEN  PRINT S$(2) SPC( 1)YL" YARDLINE"
520  GOTO 550
530  IF YL > 50 THEN R = 100 - YL: PRINT S$(2) SPC( 1)R" YARDLINE"
540  IF YL <  = 50 THEN  PRINT S$(1) SPC( 1)YL" YARDLINE"
550  PRINT
560  PRINT "TIME REMAINING="TL" MINUTES"
570  IF TL <  = 0 THEN  GOTO 1030
580  PRINT
590  IF FL = 0 THEN  PRINT "YOU HAVE THE BALL"
600  IF FL = 1 THEN  PRINT "THE COMPUTER HAS THE BALL": GOTO 790
610  PRINT : INVERSE : PRINT "DO YOU WISH TO (P)ASS, (R)UN OR (K)ICK"
620  NORMAL
630  GET K$
640  IF K$ = "P" THEN MY =  INT ( RND (1) * 40 - 15): GOTO 700
650  IF K$ = "R" THEN MY =  INT ( RND (1) * 30 - 10): GOTO 700
660  IF K$ <  > "K" THEN 630
670 MY =  INT ( RND (1) * 20 + 40)
680 YL = YL + MY: IF YL > 100 THEN 860
690  GOTO 1010
700 YL = YL + MY:YG = YG - MY
710  IF YL > 100 THEN 930
720  IF YG <  = 0 THEN 770
730  IF YL < 0 THEN 1170
740  NEXT DN:FL = FL + 1
750 YL = 100 - YL
760  IF FL = 2 THEN FL = 0
770 YG = 10:DN = 1
780  GOTO 390
790  IF DN < 4 THEN 840
800  CALL ( - 198): CALL ( - 198)
810  PRINT : PRINT "*** THE COMPUTER TRIES A KICK ***"
820  FOR T = 1 TO 700: NEXT T
830 K$ = "K": GOTO 650
840  FOR T = 1 TO 2000: NEXT T
850 K$ = "R": GOTO 650
860  HOME : PRINT M$: PRINT
870  FOR K = 1 TO 3: CALL ( - 198): NEXT K
880  PRINT : PRINT "THE KICKER SCORED A FIELD GOAL"
890  IF FL = 0 THEN PS = PS + 3
900  IF FL = 1 THEN CS = CS + 3
910  FOR T = 1 TO 1000: NEXT T
920  GOTO 1010
930  HOME : PRINT M$: PRINT
940  FOR K = 1 TO 7: CALL ( - 198): NEXT K
950  FLASH
960  PRINT " ***TOUCH-DOWN***"
970  NORMAL
980  IF FL = 0 THEN PS = PS + 7
990  IF FL = 1 THEN CS = CS + 7
1000  FOR T = 1 TO 1000: NEXT T
1010 FL = FL + 1:YL = 20
1020  GOTO 760
1030  HOME : PRINT M$
```

```
1040  FOR T = 1 TO 300: NEXT T
1050  CALL ( - 198): CALL ( - 198)
1060  PRINT : PRINT " *** THE GAME IS OVER ***"
1070  PRINT : PRINT "THE FINAL SCORE IS:"
1080  PRINT : PRINT "COMPUTER-"CS
1090  PRINT : PRINT "YOU-"PS
1100  IF CS > PS THEN  PRINT : FLASH : PRINT "COMPUTER WINS"
1110  IF CS < PS THEN  PRINT : FLASH : PRINT "YOU WIN"
1120  IF CS = PS THEN  PRINT "ITS A TIE GAME"
1130  PRINT : NORMAL : PRINT "DO YOU WISH TO PLAY AGAIN ..."
1140  GET K$: IF K$ = "Y" THEN 170
1150  IF K$ <  > "Y" THEN 1140
1160  HOME : END
1170  HOME : PRINT M$: PRINT
1180  CALL  - 198: CALL  - 198
1190  PRINT "THE BALL IS DOWNED IN THE END ZONE ..."
1200  PRINT : FLASH : PRINT " * SAFETY *"
1210  IF FL = 0 THEN CS = CS + 2
1220  IF FL = 1 THEN PS = PS + 2
1230  FOR T = 1 TO 2000: NEXT T
1240 FL = FL + 1:YL = 20
1250  GOTO 760
1260  DATA  THE BALL IS ON THE COMP'S
1270  DATA  THE BALL IS ON YOUR
```

Program 76 SHELL GAME

If you can do this, you're pretty good.

—Overheard in a bar in Tiajuana

```
10  REM  ** SHELL GAME **
20  REM
30  FOR K = 1 TO 200:B$ = B$ +  CHR$ (32): NEXT K
40 M$ =  LEFT$ (B$,15)
50 M$ = M$ + "SHELL GAME" +  CHR$ (13)
60  FOR K = 1 TO 40:L$ = L$ + "*": NEXT K
70 M$ = M$ + L$
80  TEXT : HOME : PRINT M$
90  PRINT "THIS IS A COMPUTERIZED VERSION OF THE"
100  PRINT "OLD SHELL GAME. IT OFTEN PROVES THAT"
110  PRINT "THE HAND IS QUICKER THAN THE EYE."
120  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
130  GET K$
140 RG = 0:WG = 0
150  HOME : PRINT M$
160 SN =  INT ( RND (1) * 3) + 1
170  VTAB 7: PRINT "THE PEA IS UNDER THIS SHELL ..."
180  HTAB 15: VTAB 10: PRINT "O O O";
190  GOSUB 520
200  HTAB 1: VTAB 7: CALL  - 868
210  PRINT "WATCH THE SHELLS ..."
220  GOSUB 560
230  HTAB 1: VTAB 13
240  PRINT "WHICH SHELL IS THE PEA UNDER (1-3)? ";
250  GET G$
260  IF G$ < "1" OR G$ > "3" THEN 250
270 G =  ASC (G$) - 48
280  IF G <  > SN THEN 330
290  FOR X = 1 TO 3: CALL  - 198: NEXT X
300  PRINT : FLASH : PRINT " *** YOU'RE RIGHT ***"
310 RG = RG + 1
320  GOTO 370
330  PRINT : INVERSE
340  PRINT "SORRY, THE PEA IS UNDER "SN
350 WG = WG + 1
360  FOR X = 1 TO 2: CALL  - 198: NEXT X
370  NORMAL
380  VTAB 21: PRINT "WOULD YOU LIKE TO PLAY AGAIN (Y/N)? "
390  GET K$: IF K$ = "Y" THEN 150
400  IF K$ <  > "N" THEN 390
410  HOME : PRINT : PRINT M$;: INVERSE
420  PRINT B$;: PRINT B$: VTAB 5
430  PRINT  SPC( 5)"YOU HAVE "RG" CORRECT GUESS";
440  IF RG <  > 1 THEN  PRINT "ES";
450  PRINT : PRINT  SPC( 15)"AND"
460  PRINT  SPC( 5)"YOU HAVE "WG" WRONG GUESS";
470  IF WG <  > 1 THEN  PRINT "ES";
```

```
480  NORMAL : HTAB 1: VTAB 14: PRINT L$
490  PRINT : PRINT
500  PRINT " HAVE A NICE DAY..."
510  VTAB 21: END
520  VTAB 10: HTAB 2 *  INT ( RND (1) * 3) + 15
530  FLASH : PRINT "O";: NORMAL
540  FOR T = 1 TO 2000: NEXT T
550  RETURN
560  FOR N = 1 TO  INT ( RND (1) * 15 + 15)
570  HTAB 17: VTAB 10: PRINT  CHR$ (32);
580  HTAB 17: VTAB 9: PRINT "O";
590 H =  RND (1)
600  IF H < .5 THEN  GOSUB 640
610  IF H > .5 THEN  GOSUB 770
620  NEXT N
630  RETURN
640  FOR K = 17 TO 21
650  HTAB K: VTAB 9: PRINT "O";
660  GOSUB 900
670  HTAB K: VTAB 9: PRINT  CHR$ (32);
680  NEXT K
690  HTAB 21: VTAB 10: PRINT "O";
700  GOSUB 900
710  HTAB 18: VTAB 10
720  PRINT "O O ";
730  GOSUB 900
740  HTAB 17: VTAB 10
750  PRINT "O O ";
760  RETURN
770  FOR K = 17 TO 13 STEP  - 1
780  HTAB K: VTAB 9: PRINT "O";
790  GOSUB 900
800  HTAB K: VTAB 9: PRINT  CHR$ (32);
810  NEXT K
820  HTAB 13: VTAB 10: PRINT "O";
830  GOSUB 900
840  HTAB 13: VTAB 10
850  PRINT " O O";
860  GOSUB 900
870  HTAB 14: VTAB 10
880  PRINT " O O";
890  RETURN
900  FOR T = 1 TO 10: NEXT T
910 Z =  PEEK ( - 16336)
920  RETURN
```

Program 77 FAIR SHELL GAME

He who gives, giveth. He who takes, taketh away.

—15th Century English proverb

The Shell Game in Program 76 is a perfectly honest one. This version is . . . well, not so honest. It sort of lets you win more than your fair share of shell games. When the computer asks you to enter your name, just remember to type one space before striking the space bar. The computer uses that space at the end of your name to identify you and load matters in your favor.

```
10  REM  ** FAIR SHELL GAME **
20  REM
30  FOR K = 1 TO 160:B$ = B$ +  CHR$ (32): NEXT K
40  FOR K = 1 TO 15:M$ = M$ + " ": NEXT K
50 M$ = M$ + "SHELL GAME" +  CHR$ (13)
60  FOR K = 1 TO 40:L$ = L$ + "*": NEXT K
70 M$ = M$ + L$
80  TEXT : HOME : PRINT M$
90  PRINT "THIS IS A COMPUTERIZED VERSION OF THE"
100  PRINT "OLD SHELL GAME. IT OFTEN PROVES THAT"
110  PRINT "THE HAND IS QUICKER THAN THE EYE."
120  VTAB 16
130  PRINT "THIS ONE IS FOR TWO PLAYERS, AND IT"
140  PRINT "ENCOURAGES A BIT OF WAGERING ON THE"
150  PRINT "SIDE."
160  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
170  GET K$
180 RG = 0:WG = 0
190  HOME : PRINT M$: PRINT
200  FOR PF = 1 TO 2
210  PRINT "PLAYER "PF", ENTER YOUR FIRST NAME:"
220  INPUT N$(PF):N$(PF) =  LEFT$ (N$(PF),20)
230  IF  LEN (N$(PF)) > 1 THEN 250
240  PRINT "QUIT FOOLIN' AROUND.": GOTO 220
250  PRINT : PRINT
260  NEXT PF
270  HOME : PRINT M$
280 PF = PF + 1: IF PF > 2 THEN PF = 1
290 SN =  INT ( RND (1) * 3) + 1
300  VTAB 7: PRINT " HERE IS THE PEA ..."
310  HTAB 15: VTAB 10: PRINT "O O O";
320  GOSUB 700
330  VTAB 15
340  PRINT N$(PF)", WHERE IS THE PEA (1-3)? ";
350  GET FG$
360  IF FG$ < "1" OR FG$ > "3" THEN 350
370 G$(PF) = FG$: PRINT FG$;
380  PRINT : PRINT
390  IF  RIGHT$ (N$(PF),1) <  >  CHR$ (32) THEN 410
400  IF  INT (4 *  RND (1)) > 1 THEN SN =  VAL (G$(PF))
410  IF  VAL (G$(PF)) = SN THEN 480
```

```
420  HOME : PRINT M$
430  PRINT "YOU WERE WRONG, "N$(PF)"."
440  PRINT "THE PEA WAS UNDER "SN"."
450  IF PF = 2 THEN 560
460  FOR T = 1 TO 1000: NEXT T
470  GOTO 270
480 RG(PF) = RG(PF) + 1
490  HOME : PRINT M$
500  VTAB 4
510  FLASH
520  PRINT N$(PF)", YOU GOT IT!!"
530  CALL  - 198: CALL  - 198
540  FOR T = 1 TO 1500: NEXT T
550  NORMAL : GOTO 560
560  VTAB 21: PRINT "YOU TWO WANT TO PLAY AGAIN (Y/N)? ";
570  GET K$: IF K$ = "Y" THEN 270
580  IF K$ <  > "N" THEN 570
590  HOME : PRINT : PRINT M$;: INVERSE
600  PRINT B$;: PRINT B$: VTAB 5
610  FOR K = 1 TO 2: PRINT
620  PRINT N$(K)" HAD "RG(K)" CORRECT GUESS";
630  IF RG(K) <  > 1 THEN  PRINT "ES";
640  PRINT  CHR$ (46)
650  PRINT : PRINT : NEXT K
660  NORMAL : VTAB 12: PRINT L$
670  PRINT : PRINT
680  PRINT " HAVE A NICE DAY..."
690  END
700  VTAB 10: HTAB 2 *  INT ( RND (1) * 3) + 15
710  FLASH : PRINT "O";: NORMAL
720  FOR T = 1 TO 2000: NEXT T
730  PRINT
740  VTAB 7: PRINT "NOW, WATCH THE SHELLS ..."
750  FOR N = 1 TO  INT ( RND (1) * 15 + 15)
760  HTAB 17: VTAB 10: PRINT  CHR$ (32);
770  HTAB 17: VTAB 9: PRINT "O";
780 H =  RND (1)
790  IF H < .5 THEN  GOSUB 840
800  IF H > .5 THEN  GOSUB 970
810  NEXT N
820  PRINT
830  RETURN
840  FOR K = 17 TO 21
850  HTAB K: VTAB 9: PRINT "O";
860  GOSUB 1100
870  HTAB K: VTAB 9: PRINT  CHR$ (32);
880  NEXT K
890  HTAB 21: VTAB 10: PRINT "O";
900  GOSUB 1100
910  HTAB 18: VTAB 10
920  PRINT "O O ";
930  GOSUB 1100
940  HTAB 17: VTAB 10
950  PRINT "O O ";
960  RETURN
970  FOR K = 17 TO 13 STEP  - 1
```

```
980  HTAB K: VTAB 9: PRINT "O";
990  GOSUB 1100
1000  HTAB K: VTAB 9: PRINT  CHR$ (32);
1010  NEXT K
1020  HTAB 13: VTAB 10: PRINT "O";
1030  GOSUB 1100
1040  HTAB 13: VTAB 10
1050  PRINT " O O";
1060  GOSUB 1100
1070  HTAB 14: VTAB 10
1080  PRINT " O O";
1090  RETURN
1100  FOR T = 1 TO 10: NEXT T
1110 Z =  PEEK ( - 16336)
1120  RETURN
```

Program 78 RUSSIAN ROULETTE

Heck, if you can count to six you can play Russian Roulette
—From the epitath of E. Ross Bennington

```
10  REM   ** RUSSIAN ROULETTE **
20  REM
30 M$ = ""
40  FOR K = 1 TO 11:M$ = M$ +  CHR$ (32): NEXT K
50 M$ = M$ + "RUSSIAN ROULETTE" +  CHR$ (13)
60  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
70  TEXT : HOME : PRINT M$
80  PRINT "THIS IS A GAME FOR ONE TO FIVE PLAYERS."
90  PRINT : PRINT "THE EQUIPMENT CONSISTS OF THE FOLLOWING"
100  PRINT "ITEMS:": PRINT
110  PRINT  TAB( 3)"1 EA. REVOLVER (SOMEWHERE INSIDE"
120  PRINT  TAB( 9)"THIS COMPUTER)."
130  PRINT
140  PRINT  TAB( 3)"1 EA. LIVE BULLET (IN ONE OF THE"
150  PRINT  TAB( 9)"CHAMBERS IN THE REVOLVER IN"
160  PRINT  TAB( 9)"THE COMPUTER)."
170  PRINT : PRINT "THE PLAYERS EACH TAKE A TURN PULLING"
180  PRINT "THE TRIGGER. IF THE GUN JUST MAKES A"
190  PRINT "CLICKING SOUND, THAT PLAYER SURVIVES."
200  PRINT "BUT IF THERE IS NO CLICKING SOUND ..."
210  PRINT "WELL, ENOUGH ABOUT THAT."
220  PRINT : PRINT "STRIKE ANY KEY TO CONTINUE ...";
230  GET K$: HOME : PRINT M$
240  PRINT "HOW MANY PLAYERS ARE STARTING THIS"
250  PRINT "ROUND (1-5)? ";
260  INPUT "";NP: IF NP > 0 AND NP < 6 THEN 280
270  PRINT "1 THROUGH 5, PLEASE ...";: GOTO 260
280  HOME : PRINT M$
290  FOR J = 1 TO NP
300  PRINT : PRINT "ENTER THE NAME OF PLAYER #"J":"
310  PRINT : HTAB 5
320  INPUT "";NA$(J)
330  IF  LEN (NA$(J)) > 0 AND  LEN (NA$(J)) < 20 THEN 350
340  PRINT "QUIT FOOLIN' AROUND!": GOTO 300
350  NEXT J
360 Q =  INT ( RND (1) * 6 + 1)
370  FOR N = 1 TO NP
380  IF  RIGHT$ (NA$(N),1) =  CHR$ (32) THEN Q = N
390  NEXT N
400  FOR J = 1 TO NP
410  HOME : PRINT M$
420  PRINT NA$(J)":": PRINT
430  PRINT "PULL THE TRIGGER OR STRIKE ANY KEY ..."
440  GET K$
450  FOR T = 1 TO 250: NEXT T
460  IF Q = J THEN 580
470  PRINT : PRINT "*** CLICK ***"
480 CLK =  PEEK ( - 16336):CLK =  PEEK ( - 16336)
```

```
490  FOR T = 1 TO 2000: NEXT T
500  NEXT J
510  VTAB 19: PRINT "ALL PLAYERS SURVIVED THIS ROUND."
520  PRINT
530  PRINT "ARE YOU WILLING TO PUSH YOUR LUCK AND"
540  PRINT "TRY ANOTHER ROUND (Y/N)?";
550  GET K$
560  IF K$ = "N" THEN  HOME : END
570  GOTO 360
580  HOME : PRINT M$: PRINT
590  PRINT "*** BANG ***"
600  FOR T = 1 TO 5: CALL ( - 198): NEXT T
610  PRINT : PRINT "DEAR "NA$(J)":"
620  PRINT : PRINT  TAB( 5)"YOU OBVIOUSLY HAVE NO DESIRE"
630  PRINT  TAB( 5)"TO PLAY AGAIN."
640  PRINT : PRINT "GOOD BYE ..."
650  END
```

Program 79 FAIR RUSSIAN ROULETTE

The measure of a man's real character is what he would do if he knew he never would be found out.

—Thomas Babingon Macaulay

I hate to say what happens to a player when you discretely insert a space at the end of his or her name. Tsk-tsk. Shame on you.

```
10  REM   ** RUSSIAN ROULETTE **
20  REM
30  FOR K = 1 TO 11:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "RUSSIAN ROULETTE" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "THIS IS A GAME FOR ONE TO FIVE PLAYERS."
80  PRINT : PRINT "THE EQUIPMENT CONSISTS OF THE FOLLOWING"
90  PRINT "ITEMS:": PRINT
100  PRINT  TAB( 3)"1 EA. REVOLVER (SOMEWHERE INSIDE"
110  PRINT  TAB( 9)"THIS COMPUTER)."
120  PRINT
130  PRINT  TAB( 3)"1 EA. LIVE BULLET (IN ONE OF THE"
140  PRINT  TAB( 9)"CHAMBERS IN THE REVOLVER IN"
150  PRINT  TAB( 9)"THE COMPUTER)."
160  PRINT : PRINT "THE PLAYERS EACH TAKE A TURN PULLING"
170  PRINT "THE TRIGGER. IF THE GUN JUST MAKES A"
180  PRINT "CLICKING SOUND, THAT PLAYER SURVIVES."
190  PRINT "BUT IF THERE IS NO CLICKING SOUND ..."
200  PRINT "WELL, ENOUGH ABOUT THAT."
210  PRINT : PRINT "STRIKE ANY KEY TO CONTINUE ...";
220  GET K$: HOME : PRINT M$
230  PRINT "HOW MANY PLAYERS ARE STARTING THIS"
240  PRINT "ROUND (1-5)? ";
250  INPUT "";NP: IF NP > 0 AND NP < 6 THEN 270
260  PRINT "1 THROUGH 5, PLEASE ...";: GOTO 250
270  HOME : PRINT M$
280  FOR J = 1 TO NP
290  PRINT : PRINT "ENTER THE NAME OF PLAYER #"J":"
300  PRINT : HTAB 5
310  INPUT "";NA$(J)
320  IF  LEN (NA$(J)) > 0 AND  LEN (NA$(J)) < 20 THEN 340
330  PRINT "QUIT FOOLIN' AROUND!": GOTO 290
340  NEXT J
350 Q =  INT ( RND (1) * 6 + 1)
360  FOR N = 1 TO NP
370  IF  RIGHT$ (NA$(N),1) =  CHR$ (32) THEN Q = N
380  NEXT N
390  FOR J = 1 TO NP
400  HOME : PRINT M$
410  PRINT NA$(J)":": PRINT
420  PRINT "PULL THE TRIGGER OR STRIKE ANY KEY ..."
430  GET K$
```

```
440  FOR T = 1 TO 250: NEXT T
450  IF Q = J THEN 570
460  PRINT : PRINT "*** CLICK ***"
470 CLK =  PEEK ( - 16336):CLK =  PEEK ( - 16336)
480  FOR T = 1 TO 2000: NEXT T
490  NEXT J
500  VTAB 19: PRINT "ALL PLAYERS SURVIVED THIS ROUND."
510  PRINT
520  PRINT "ARE YOU WILLING TO PUSH YOUR LUCK AND"
530  PRINT "TRY ANOTHER ROUND (Y/N)?";
540  GET K$
550  IF K$ = "N" THEN  HOME : END
560  GOTO 350
570  HOME : PRINT M$: PRINT
580  PRINT "*** BANG ***"
590  FOR T = 1 TO 5: CALL ( - 198): NEXT T
600  PRINT : PRINT "DEAR "NA$(J)":"
610  PRINT : PRINT  TAB( 5)"YOU OBVIOUSLY HAVE NO DESIRE"
620  PRINT  TAB( 5)"TO PLAY AGAIN."
630  PRINT : PRINT "GOOD BYE ..."
640  END
```

Program 80 SIMPLE SIMON SEQUENCE

1-2-2-4-4 . . .@ $$ @. 4-2-2-1-3 . . . *& ^ @! 1-1-2-4 . . .

—Overheard in countless homes on Christmas day, 1980

```
10  REM  ** SIMPLE SIMON **
20  REM
30  DIM A(100)
40  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
50 M$ = M$ + "SIMPLE SIMON" +  CHR$ (13)
60  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
70  TEXT : HOME : PRINT M$
80  PRINT "DO YOU THINK YOU CAN REMEMBER A SE-"
90  PRINT "QUENCE OF NUMBERS? CAN YOU DO IT IF"
100  PRINT "THE SEQUENCE GROWS LONGER WITH EACH"
110  PRINT "ATTEMPT?"
120  PRINT : PRINT "YOUR JOB HERE IS TO REPRODUCE THE SE-"
130  PRINT "QUENCE AFTER THE COMPUTER SHOWS IT TO"
140  PRINT "YOU."
150  PRINT : PRINT "WHAT'S THE LONGEST SEQUENCE YOU THINK"
160  PRINT "YOU CAN DO (2-100)? ";
170  INPUT "";SL
180  IF SL < 2 OR SL > 100 THEN  PRINT "? ";: GOTO 170
190  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
200  GET K$
210  HOME : PRINT M$
220  GOSUB 470
230  FOR K = 1 TO SL
240 A(K) =  INT ( RND (1) * 4 + 1)
250  FOR J = 1 TO K
260  INVERSE :HT = A(J) * 5 + 10
270  VTAB 12: HTAB HT + 1
280  PRINT  SPC( 1);A(J); SPC( 1)
290  NORMAL
300  CALL  - 198
310  FOR T = 1 TO 200: NEXT T
320  GOSUB 470
330  NEXT J
340  GOSUB 510
350  IF FL = 1 THEN 610
360  NEXT K
370  HOME : PRINT M$
380  FLASH
390  PRINT "** YOU BEAT THE MACHINE **"
400  NORMAL : PRINT "WITH A SEQUENCE OF "SL" NUMBERS."
410  VTAB 21: PRINT "TRY AGAIN (Y/N)? ";
420 FL = 0
430  GET K$
440  IF K$ = "Y" THEN  HOME : PRINT M$: GOTO 150
```

```
450  IF K$ <  > "N" THEN 430
460  END
470  FOR N = 1 TO 4
480  VTAB 12: HTAB 11 + 5 * N
490  PRINT  SPC( 1);N; SPC( 1)
500  NEXT N: RETURN
510  FOR L = 1 TO K
520  GET K$
530  IF K$ > "4" OR K$ < "1" THEN 520
540 NK =  ASC (K$) - 48
550 I(L) = NK
560  IF I(L) <  > A(L) THEN FL = 1: RETURN
570 Q = I(L)
580  NEXT L
590  FOR T = 1 TO 700: NEXT T
600  RETURN
610  HOME : PRINT M$: PRINT
620  PRINT " *** YOU GOOFED ***"
630  PRINT : PRINT "YOU GOT "J - 2" KEYS CORRECT"
640  GOTO 410
650  END
```

Program 81 REACTION-TIME TESTER

Faster than a speeding bullet (Pow!—cheweeeeng).
More powerful than a locomotive (Chucka-chucka-chucka)!
Able to leap tall buildings at a single bound (Wissssh)!
Look! Up in the sky!
It's a bird!
It's a plane!
It's Su-u-u-u-uper Ma-a-a-an!

—From Mutual Broadcasting's "Superman"

```
10  REM  ** REACTION-TIME TESTER **
20  REM
30  FOR K = 1 TO 10:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "REACTION-TIME TESTER" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60 F = 0:SM = 0:R = 0
70  TEXT : HOME : PRINT M$
80  PRINT "STRIKE THE SPACE BAR WHEN THE ASTER-"
90  PRINT "ISKS (*) APPEAR."
100  VTAB 12
110  PRINT "WATCH FOR ASTERISKS ..."
120  CALL ( - 198): CALL ( - 198)
130 D =  INT ( RND (1) * 600 + 300)
140  POKE  - 16368,0
150  FOR T = 1 TO D
160  IF  PEEK ( - 16384) > 128 THEN 440
170  NEXT T
180 R = 0
190  PRINT : PRINT "******************"
200  POKE  - 16368,0
210  FOR R = 1 TO 200
220  IF  PEEK ( - 16384) > 128 THEN 250
230  NEXT R
240  PRINT : PRINT "YOU TOOK TOO LONG; FORGET IT": END
250  PRINT : PRINT
260  CALL ( - 198): CALL ( - 198)
270 R =  INT (R * 100 / 85)
280  PRINT "YOUR REACTION TIME IS "R" HUNDREDTHS"
290  PRINT "OF A SECOND"
300  PRINT : PRINT "WOULD YOU LIKE TO TRY AGAIN (Y/N)?";
310  POKE  - 16368,0
320 F = F + 1:SM = SM + R
330  GET K$: IF K$ = "Y" THEN 70
340  IF K$ <  > "N" THEN 330
350  HOME : PRINT M$: PRINT : PRINT
360 AV =  INT (SM / F)
370  PRINT "YOUR AVERAGE SCORE IS "AV" HUNDREDTHS
380  PRINT "OF A SECOND."
390  PRINT : PRINT
400  IF AV > 50 THEN  PRINT "YOU NEED A LITTLE IMPROVEMENT"
410  IF AV < 25 THEN  PRINT "THAT'S VERY GOOD"
```

```
420  IF AV >  = 25 AND AV <  = 50 THEN  PRINT "NOT BAD"
430  END
440  PRINT "TOO SOON -- CALM DOWN": GOTO 130
```

Program 82 SPEECH WRITER

"What more can I say?"

—Overheard at a Toastmaster's convention

Say what you're going to say. Say it. Then say what you said. This program helps a lot.

```
10  REM  ** SPEECH WRITER **
20  REM
30 H$ = "SPEECH WRITER" +  CHR$ (13)
40  FOR K = 1 TO 40:H$ = H$ + "=": NEXT K
50  TEXT : HOME : PRINT H$
60  PRINT "ARE YOU MALE OR FEMALE (M/F)? ";
70  GET SX$
80  IF SX$ = "M" OR SX$ = "F" THEN 100
90  GOTO 70
100  PRINT SX$: PRINT
110  PRINT "ARE YOU MARRIED (Y/N)? ";
120  GET MS$
130  IF MS$ = "Y" OR MS$ = "N" THEN 150
140  GOTO 120
150  PRINT MS$: PRINT
160  PRINT "INDICATE WHAT TIME OF DAY THE SPEECH"
170  PRINT "WILL BE DELIVERED:"
180  PRINT : PRINT  TAB( 5)"1 -- MORNING"
190  PRINT  TAB( 5)"2 -- AFTERNOON"
200  PRINT  TAB( 5)"3 -- EVENING"
210  GET TD$
220  IF TD$ > "3" OR TD$ < "1" THEN 210
230  IF TD$ = "1" THEN TD$ = "MORNING"
240  IF TD$ = "2" THEN TD$ = "AFTERNOON"
250  IF TD$ = "3" THEN TD$ = "EVENING"
260  IF SX$ = "M" AND MS$ = "Y" THEN Z$ = "WIFE"
270  IF SX$ = "M" AND MS$ = "N" THEN Z$ = "GIRLFRIEND"
280  IF SX$ = "F" AND MS$ = "Y" THEN Z$ = "HUSBAND"
290  IF SX$ = "F" AND MS$ = "N" THEN Z$ = "BOYFRIEND"
300  HOME : PRINT H$
310  PRINT "ENTER A SENTENCE OR PHRASE OF "
320  PRINT "120 CHARACTERS OR LESS THAT EXPRESSES"
330  PRINT "YOUR OPINION ON A MATTER OF GREAT "
340  PRINT "IMPORTANCE.  ENCLOSE YOUR UTTERANCE"
350  PRINT "IN QUOTES IF YOU PLAN TO USE ANY "
360  PRINT "PUNCTUATION": PRINT
370  INPUT S$
380 LS =  LEN (S$)
390  IF LS > 5 THEN 420
400  PRINT "YOU HAVE TO SAY SOMETHING MORE"
410  PRINT "THAN THAT.  TRY AGAIN ...": GOTO 370
420  IF  RIGHT$ (S$,1) =  CHR$ (46) THEN 440
430 S$ = S$ +  CHR$ (46):LS = LS + 1
440  GOSUB 880
450  PRINT
```

```
460  IF LS <  = 125 THEN 490
470  PRINT "A LITTLE LONG-WINDED, TRY AGAIN ..."
480  GOTO 370
490  HOME : PRINT H$
500  PRINT : PRINT "PLEASE WAIT WHILE I COMPOSE THE"
510  PRINT "SPEECH FOR YOU ..."
520  GOSUB 1050
530  VTAB 20
540  PRINT "OK, THE SPEECH IS READY.  STRIKE ANY "
550  PRINT "KEY TO SEE IT ...";
560  GET K$
570  HOME : PRINT H$
580  GOSUB 970:Y$ = M$(1): GOSUB 900
590  GOSUB 1050
600 Y$ = "PLEASE!!": GOSUB 900
610  PRINT : PRINT
620  PRINT "(PAUSE FOR LAUGHTER)": PRINT
630  FOR XX = 1 TO 2: GOSUB 1050: NEXT XX
640  HOME : PRINT H$: PRINT
650 Y$ = "THE TOPIC OF THIS " + TD$ + "'S "
660 Y$ = Y$ + "DISCUSSION IS:" +  CHR$ (32) + S$
670  GOSUB 1050: GOSUB 900
680  PRINT : PRINT
690  PRINT "(MEANINGFUL PAUSE)": PRINT
700  GOSUB 1050
710 Y$ = S$: GOSUB 900
720  PRINT : PRINT
730  GOSUB 1050
740 Y$ = "AND TO SUMMARIZE THE MATTER: "
750  GOSUB 900: GOSUB 1050
760 Y$ = S$: GOSUB 900: GOSUB 1050
770  PRINT : PRINT
780 Y$ = "THANK YOU FOR YOUR KIND ATTENTION."
790 Y$ = Y$ + " AND HAVE A GOOD " + TD$ +  CHR$ (46)
800  GOSUB 900: GOSUB 1050
810  PRINT : PRINT
820  PRINT "(SMILE AND NOD THROUGH APPLAUSE)"
830  PRINT : PRINT "WANT TO COMPOSE ANOTHER SPEECH (Y/N)? ";
840  GET K$
850  IF K$ = "Y" THEN 50
860  IF K$ = "N" THEN  END
870  GOTO 840
880 X$ = S$
890  RETURN
900  FOR N = 1 TO  LEN (Y$)
910 CH$ =  MID$ (Y$,N,1)
920  IF  POS (0) > 32 AND CH$ =  CHR$ (32) THEN  PRINT : GOTO 940
930  PRINT CH$;
940  FOR T = 1 TO 50: NEXT T
950  NEXT N
960  RETURN
970 A$ = "A FUNNY THING HAPPENED TO ME ON THE WAY "
980 A$ = A$ + "HERE THIS " + TD$ + ":" +  CHR$ (32)
990 A$ = A$ + "A GUY STOPPED ME ON THE STREET AND ASKED "
1000 A$ = A$ + "ME FOR AN EXAMPLE OF SOMETHING THAT "
1010 A$ = A$ + "REALLY BOTHERS ME. I SAID, 'TAKE MY " + Z$
```

```
1020 A$ = A$ + ", FOR EXAMPLE ..."
1030 M$(1) = A$
1040  RETURN
1050  FOR T = 1 TO 2000: NEXT T
1060  RETURN
```

Program 83 DUNGEON CHARACTER GENERATOR #1

Making what is inherently simple seem exceedingly difficult is the challenge of incompetence.

—Dungeon Master

```
10  REM  ** DUNGEON CHARACTER GENERATOR #1 **
20  REM
30  FOR K = 1 TO 40
40 X$ = X$ +  CHR$ (32):Y$ = Y$ +  CHR$ (46)
50  NEXT K
60 M$ = "DUNGEON CHARACTER GENERATOR #1" +  CHR$ (13)
70 M$ =  LEFT$ (X$,5) + M$ + Y$
80  TEXT : HOME : PRINT M$
90  PRINT "ENTER THE CHARACTER'S NAME:"
100  PRINT : INPUT CN$
110  HOME : PRINT M$
120  INVERSE : PRINT CN$: NORMAL
130  PRINT
140  RESTORE
150  PRINT
160  FOR N = 1 TO  INT (2 *  RND (1) + 6)
170  READ D$
180  IF N = 6 OR N = 7 THEN  PRINT
190  PRINT D$; LEFT$ (Y$,30 -  POS (0));
200  GOSUB 300
210  IF N = 6 THEN  PRINT RD * 10: GOTO 230
220  PRINT RD
230  NEXT N
240  VTAB 21
250  PRINT "NEED ANOTHER CHARACTER (Y/N)? ";
260  GET K$
270  IF K$ = "Y" THEN 80
280  IF K$ = "N" THEN  END
290  GOTO 260
300 RD =  INT (10 *  RND (1) + 9): RETURN
310  DATA  STRENGTH,WISDOM,DEXTERITY,CONSTITUTION
320  DATA  CHARISMA,GOLD PIECES,SHOE SIZE
```

Program 84 TIC-TAC-TOE

The will to conquer is the first condition of victory.

—Marshal Ferdinand Foch

```
10  REM  ** TIC-TAC-TOE **
20  REM
30  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "TIC-TAC-TOE" +  CHR$ (13)
50  FOR K = 1 TO 40:Y$ = Y$ + "#": NEXT K
60 M$ = M$ + Y$
70  TEXT : HOME : PRINT M$
80  PRINT "THINK YOU ARE PRETTY GOOD WITH THE OLD"
90  PRINT "X'S AND O'S?"
100  PRINT : PRINT "WELL, TRY ME!"
110  FOR T = 1 TO 100
120  IF T > 95 THEN  CALL  - 198
130  NEXT T
140  PRINT : FLASH
150  PRINT "CHALLENGE": NORMAL
160  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
170  GET K$
180  FOR K = 1 TO 8: READ C(K): NEXT K
190 B$ =  CHR$ (32) +  CHR$ (32) +  CHR$ (32) +  CHR$ (32)
200  FOR Y = 1 TO 8: FOR X = 1 TO 3
210  READ N(Y,X): NEXT X: NEXT Y
220  DIM A$(9): DIM W(8,3)
230  FOR K = 1 TO 9:A$(K) = "*": NEXT K
240 A$(1) = "O":FL = 0
250  HOME : PRINT M$
260  GOSUB 730
270  HTAB 1: VTAB 18
280  PRINT "WHICH SQUARE DO YOU WANT (1-9)? ";
290  GET K$: IF K$ < "1" OR K$ > "9" THEN  CALL  - 198: GOTO 290
300  HTAB 1: VTAB 18
310  PRINT "PLEASE WAIT ..." SPC( 40 -  POS (0))
320 SQ =  ASC (K$) - 48
330  IF A$(SQ) <  > "*" THEN  CALL  - 198: GOTO 270
340 A$(SQ) = "X"
350  GOSUB 590
360  IF FL > 0 THEN 410
370  GOSUB 830
380  GOSUB 590
390  IF FL > 0 THEN 410
400  GOTO 260
410  GOSUB 730
420  IF FL <  > 1 THEN 460
430  PRINT : FLASH : PRINT "I WON"
440  FOR K = 1 TO 3: CALL  - 198: NEXT K
450  GOTO 530
460  IF FL <  > 2 THEN 500
470  PRINT : FLASH : PRINT "YOU WIN"
480  FOR K = 1 TO 4: CALL  - 198: NEXT K
```

```
490  GOTO 530
500  HOME : PRINT M$: PRINT
510  FOR K = 1 TO 5: CALL  - 198: NEXT K
520  FLASH : PRINT "IT'S A TIE GAME"
530  NORMAL : PRINT
540  PRINT "PLAY AGAIN (Y/N)? ";
550  GET K$
560  IF K$ = "Y" THEN 230
570  IF K$ = "N" THEN  HOME : END
580  GOTO 550
590  FOR Y = 1 TO 8:CR = 0:XR = 0:SR = 0
600  FOR X = 1 TO 3:SQ = N(Y,X)
610  IF A$(SQ) = "X" THEN XR = XR + 1
620  IF A$(SQ) = "O" THEN CR = CR + 1
630  NEXT X
640  IF CR = 3 THEN FL = 1
650  IF XR = 3 THEN FL = 2
660  IF FL <  > 0 THEN 720
670  FOR K = 1 TO 9
680  IF A$(K) = "*" THEN SR = SR + 1
690  NEXT K
700  IF SR = 0 THEN FL = 3
710  NEXT Y
720  RETURN
730  HOME : PRINT M$
740  VTAB 21: PRINT Y$
750  PRINT "O=COMPUTER" SPC( 8)"X=YOU"
760  VTAB 4
770  FOR C = 0 TO 6 STEP 3: PRINT : PRINT : PRINT
780  FOR R = 1 TO 3: PRINT B$;
790 N = R + C: PRINT N;
800  PRINT A$(N);
810  NEXT R,C: PRINT : PRINT
820  PRINT : RETURN
830 CNT = 1
840  IF A$(C(CNT)) = "*" THEN A$(C(CNT)) = "O": GOTO 880
850 CNT = CNT + 1
860  IF CNT > 8 THEN FL = 3: GOTO 880
870  GOTO 840
880  RETURN
890  DATA  9,3,7,5,2,4,6,8
900  DATA  1,2,3,4,5,6,7,8,9
910  DATA  1,4,7,2,5,8,3,6,9
920  DATA  1,5,9,3,5,7
```

Program 85 MAZES

A man must have a certain amount of intelligent ignorance to get anywhere.
—Charles F. Kettering

```
10  REM  ** RANDOM MAZE **
20  REM
30  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "RANDOM MAZE" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "THE COMPUTER IS ABOUT TO DRAW A MAZE"
80  PRINT "FOR YOU. YOUR OBJECTIVE IS TO DIRECT"
90  PRINT "AN ORANGE CREATURE THROUGH THE MAZE"
100  PRINT "AND TO A MAGENTA-COLORED GOAL BOX."
110  PRINT : PRINT "THE TRICK IS TO DO THE JOB WITH AS FEW"
120  PRINT "STEPS AS POSSIBLE."
130  VTAB 21: PRINT "ARE YOU AN EXPERT MAZE SOLVER? ";
140 DF = 550:SCR = 0
150  GET C$
160  IF C$ = "Y" THEN 200
170  IF C$ <  > "N" THEN 150
180 DF = 250
190  IF C$ = "Y" THEN DF = 250
200  GR : HOME
210  PRINT  TAB( 3)"<RETURN>=EXIT";
220  PRINT  SPC( 3)"U=UP" SPC( 5)"R=RIGHT"
230  PRINT  TAB( 19)"D=DOWN" SPC( 3)"L=LEFT"
240 ST = 0
250  COLOR= 5: FOR K = 0 TO 39
260  VLIN 0,39 AT K: NEXT K
270  COLOR= 2
280  FOR ND = 1 TO DF
290 X =  INT ( RND (1) * 40):Y =  INT ( RND (1) * 40)
300  PLOT X,Y
310  NEXT ND
320  COLOR= 1: PLOT 2,2
330  COLOR= 9: PLOT 37,37
340 NX = 37:X = 37:Y = 37:NY = 37
350  GET K$
360 NX = X:NY = Y
370  IF K$ = "U" THEN NY = Y - 1: GOTO 450
380  IF K$ = "L" THEN NX = X - 1: GOTO 450
390  IF K$ = "R" THEN NX = X + 1: GOTO 450
400  IF K$ = "D" THEN NY = Y + 1: GOTO 450
410  COLOR= CL: PLOT X,Y
420 CL = 9
430  IF K$ =  CHR$ (13) THEN 590
440  GOTO 350
450  IF NX > 39 OR NX < 0 THEN 530
460  IF NY > 39 OR NY < 0 THEN 530
470 CC =  SCRN( NX,NY)
480  IF CC = 5 OR CC = 9 THEN  GOSUB 690
```

```
490  IF CC = 1 THEN 540
500  IF CC = 5 THEN CL = 9: GOTO 410
510  CALL  - 198
520 HF = 1: GOSUB 700
530  GOTO 410
540  FOR K = 1 TO 6: CALL ( - 198): NEXT K
550  TEXT : HOME : PRINT M$
560  PRINT "YOU DID IT IN "ST" MOVES."
570 SCR = SCR + 1
580  GOTO 600
590  TEXT : HOME
600  VTAB 21: PRINT "LIKE TO TRY AGAIN (Y/N)? ";
610  GET K$: IF K$ = "Y" THEN 200
620  IF K$ <  > "N" THEN 610
630  HOME : PRINT M$
640  VTAB 8
650  PRINT "WELL, YOU MADE IT THROUGH "SCR" MAZE";
660  IF SCR <  > 1 THEN  PRINT "S";
670  PRINT  CHR$ (46)
680  END
690  COLOR= 5: PLOT X,Y: COLOR= 9
700 ST = ST + 1
710  HTAB 1: VTAB 22
720  INVERSE : PRINT "SCORE="ST;: NORMAL
730  PRINT  SPC( 12 -  POS (0))
740  IF HF = 1 THEN HF = 0: RETURN
750 X = NX:Y = NY: RETURN
```

Program 86 ROBOT MAZE

The danger of the past was that men became slaves. The danger of the future is that man may become robot.

—Erich Fromm

```
10  REM  ** ROBOT MAZE **
20  REM
30  FOR K = 1 TO 15:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "ROBOT MAZE" +  CHR$ (13)
50  FOR K = 1 TO 40:L$ = L$ + "=": NEXT K
60 M$ = M$ + L$
70 BM = 32000
80  HOME : PRINT M$
90  PRINT "THINK YOU HAVE TO BE INTELLIGENT TO"
100  PRINT "SOLVE A MAZE? WELL, NOT SO."
110  PRINT
120  PRINT "THE RANDOM-MOTION 'ROBOT' IN THIS PRO-"
130  PRINT "GRAM PROVES THE POINT."
140  PRINT : PRINT
150  PRINT "ENTER A LEVEL OF MAZE COMPLEXITY FOR"
160  PRINT "THE LITTLE SUCKER (1-5) ";
170  GET K$
180  IF K$ < "1" OR K$ > "5" THEN 170
190  PRINT  SPC( 1)K$
200 DL =  VAL (K$)
210  VTAB 21
220  PRINT "STRIKE ANY KEY TO BEGIN ...";
230  GET K$
240  GR : HOME : GOSUB 490
250 NM = 0
260  VTAB 23
270  PRINT "STRIKE ANY KEY TO ABORT ....";
280 CH = 37:CV = 37
290 I =  INT (5 *  RND (1)) - 2
300 J =  INT (5 *  RND (1)) - 2
310  IF I = 0 AND J = 0 THEN 290
320 NH = CH + I:NV = CV + J
330 YY =  SCRN( NH,NV)
340  IF YY = 1 THEN 760
350  IF YY > 5 THEN  CALL  - 198: GOTO 290
360  IF  SCRN( NH,NV) > 5 THEN 290
370 G =  PEEK ( - 16336)
380 NM = NM + 1
390  HTAB 1: VTAB 21
400  INVERSE
410  PRINT "NO. MOVES="NM
420  NORMAL
430  COLOR= 5: PLOT CH,CV
440  COLOR= 9: PLOT NH,NV
450 CH = NH:CV = NV
460 K =  PEEK ( - 16384): POKE  - 16368,0
470  IF K > 127 THEN  HOME : GOTO 790
```

```
480  GOTO 320
490  COLOR= 5
500  FOR N = Ø TO 39
510  VLIN Ø,39 AT N
520  NEXT N
530  COLOR= 15
540  FOR N = Ø TO 1: HLIN Ø,39 AT N: NEXT N
550  FOR N = 38 TO 39: HLIN Ø,39 AT N: NEXT N
560  FOR N = Ø TO 1: VLIN Ø,39 AT N: NEXT N
570  FOR N = 38 TO 39: VLIN Ø,39 AT N: NEXT N
580  COLOR= 1
590  FOR N = 2 TO 6
600  VLIN 2,6 AT N
610  NEXT N
620  COLOR= 6
630  FOR N = 1 TO 6 + 3 * DL
640 W =  INT (36 *  RND (1)) + 2
650 Z =  INT (36 *  RND (1)) + 2
660  FOR X = W TO W + 3
670  FOR Y = Z TO Z + 3
680  IF  SCRN( X,Y) <  > 5 THEN 640
690  IF X = 37 AND Y = 37 THEN 640
700  NEXT Y,X
710  FOR X = W TO W + 3
720  FOR Y = Z TO Z + 3
730  PLOT X,Y
740  NEXT Y,X,N
750  RETURN
760  HOME
770  PRINT "HE DID IT IN "NM" MOVES."
780  IF NM < BM THEN BM = NM
790  PRINT "BEST SO FAR IS ";
800  IF BM >  = 32000 THEN  PRINT "NOT RELEVANT";: GOTO 820
810  PRINT BM;
820  PRINT  CHR$ (46)
830  PRINT "WANT TO SEE IF HE CAN DO BETTER (Y/N)?";
840  GET K$
850  IF K$ = "Y" THEN  TEXT : HOME : PRINT M$: GOTO 150
860  IF K$ <  > "N" THEN 840
870  TEXT : HOME : END
```

Program 87 ROACH RACE

Look at that little sucker go!

—Overheard on an Air Force base in Turkey

```
10  REM   ** ROACH RACE **
20  REM
30  FOR N = 0 TO 14:X$ = X$ +  CHR$ (32): NEXT N
40 M$ = X$ + "ROACH RACE"
50  TEXT : HOME : PRINT M$
60  FOR N = 0 TO 39
70  PRINT "#";:X =  PEEK ( - 16336)
80  FOR T = 0 TO 50: NEXT T
90  NEXT N: PRINT
100  PRINT "YOU ARE ABOUT TO WITNESS RACES BETWEEN"
110  PRINT "A PAIR OF ROACHES.": PRINT
120  VTAB 12
130  FLASH : PRINT "WARNING:";: NORMAL
140  FOR N = 0 TO 4: CALL  - 198: NEXT N
150  PRINT " BETTING ON ROACH RACES MAY BE"
160  PRINT "ILLEGAL IN YOUR STATE."
170  VTAB 20: PRINT "STRIKE ANY KEY TO SET UP THE"
180  PRINT "ROACH RACE TRACK ...";
190  GET K$
200  GR
210  COLOR= 153
220  VLIN 2,35 AT 2: VLIN 2,35 AT 18: VLIN 2,35 AT 35
230  COLOR= 34
240  PLOT 9,32
250  PLOT 26,32
260  HOME : PRINT "GET READY ..."
270  FOR T = 0 TO 1500: NEXT T
280  HOME : PRINT "GET SET ..."
290  FOR T = 0 TO 1500: NEXT T
300  CALL  - 198
310  HOME : PRINT : PRINT M$
320 LX = 9:LY = 32:RX = 26:RY = 32
330  FOR T = 0 TO 50: NEXT T
340 X =  PEEK ( - 16336)
350 LP =  RND (1):RP =  RND (1)
360  GOSUB 640
370  IF LP < .2 THEN 520
380  IF LP > .8 THEN 550
390 LY = LY - 1
400  IF RP < .2 THEN 580
410  IF RP > .8 THEN 610
420 RY = RY - 1
430  IF (RY < 5) OR (LY < 5) THEN  GOTO 460
440  PLOT LX,LY: PLOT RX,RY
450  GOTO 330
460  HOME : FLASH
470  PLOT LX,LY: PLOT RX,RY
480  IF LY < 5 AND RY < 5 THEN  PRINT "IT'S A TIE!!": GOTO 510
```

```
490  IF LY < 5 THEN  PRINT "THE ROACH ON THE LEFT WON!!"
500  IF RY < 5 THEN  PRINT "THE ROACH ON THE RIGHT WON!!"
510  NORMAL : GOTO 710
520 LX = LX - 1
530  IF LX < 3 THEN LX = 3
540  GOTO 400
550 LX = LX + 1
560  IF LX > 17 THEN LX = 17
570  GOTO 400
580 RX = RX - 1
590  IF RX < 18 THEN RX = 19
600  GOTO 430
610 RX = RX + 1
620  IF RX > 34 THEN RX = 34
630  GOTO 430
640  REM  ERASE
650  COLOR= 0
660  PLOT LX,LY
670  PLOT RX,RY
680  COLOR= 34
690 X =  PEEK ( - 16336)
700  RETURN
710  PRINT "STRIKE RETURN TO RACE AGAIN."
720  PRINT "OR STRIKE THE X KEY TO DO"
730  PRINT "SOMETHING ELSE ...";
740  GET A$: IF A$ = "X" THEN 760
750  GOTO 200
760  TEXT : HOME
```

Program 88 ROACH RACE PLUS

It's OK to take candy from a baby as long as you know where it has been.
—From *Modern American Wisdom* (unpublished)

Sneaking a space at the end of your name gives your roach a shot of steroids.

```
10  REM  ** ROACH RACE **
20  REM
30  GOSUB 1110
40  FOR N = 0 TO 14:X$ = X$ +  CHR$ (32): NEXT N
50 M$ = X$ + "ROACH RACE"
60  TEXT : HOME : PRINT M$
70  FOR N = 0 TO 39
80  PRINT "#";:X =  PEEK ( - 16336)
90  FOR T = 0 TO 50: NEXT T
100  NEXT N: PRINT
110  PRINT "YOU ARE ABOUT TO WITNESS RACES BETWEEN"
120  PRINT "A PAIR OF ROACHES.": PRINT
130  VTAB 12
140  FLASH : PRINT "WARNING:";: NORMAL
150  FOR N = 0 TO 4: CALL  - 198: NEXT N
160  PRINT " BETTING ON ROACH RACES MAY BE"
170  PRINT "ILLEGAL IN YOUR STATE."
180  VTAB 20: PRINT "STRIKE ANY KEY TO SET UP THE BETS ...";
190  GET K$
200  TEXT : HOME : PRINT M$
210  FOR K = 1 TO 2
220  PRINT : PRINT "PLAYER "K" WHAT IS YOUR NAME ";
230  INPUT N$(K)
240  IF N$(K) = "" THEN 220
250 M(K) = 100
260  REM
270  NEXT K
280  HOME : PRINT M$
290  PRINT N$(1)":": PRINT M1$;"LEFT."
300  PRINT
310  PRINT N$(2)":": PRINT M1$;"RIGHT.": PRINT
320  FOR K = 1 TO 2: PRINT N$(K)":"
330  PRINT "YOU HAVE $"M(K)". PLACE YOUR BET -- $";
340  INPUT "";B(K)
350  IF B(K) > M(K) THEN  PRINT M2$: GOTO 330
360  IF B(K) <  = 0 THEN  PRINT M3$: GOTO 330
370  NEXT K
380  IF  RIGHT$ (N$(1),1) =  CHR$ (32) THEN F1 = 1
390  IF  RIGHT$ (N$(2),1) =  CHR$ (32) THEN F2 = 1
400  HOME : PRINT M$: PRINT
410  PRINT "THE BETS ARE ALL IN."
420  VTAB (20): PRINT "STRIKE ANY KEY TO BEGIN THE RACE ..."
430  GET K$: GR
440  HOME : PRINT : PRINT M$
450  COLOR= 153
460  VLIN 2,35 AT 2: VLIN 2,35 AT 18: VLIN 2,35 AT 35
```

```
470  COLOR= 34: PLOT 9,32: PLOT 26,32
480 LX = 9:LY = 32:RX = 26:RY = 32
490  HOME : PRINT : PRINT "GET READY ..."
500  FOR T = 1 TO 1200: NEXT T
510  HOME : PRINT : PRINT "GET SET ...  "
520  FOR T = 1 TO 1200: NEXT T
530  HOME : PRINT : PRINT M$
540  CALL  - 198
550  FOR X = 1 TO 50: NEXT X
560 CLK =  PEEK ( - 16336):CLK =  PEEK ( - 16336)
570 LP =  RND (1):RP =  RND (1)
580  GOSUB 830
590  IF LP < .2 THEN 710
600  IF LP > .8 THEN 740
610 LY = LY - 1
620  IF RP < .2 THEN 770
630  IF RP > .8 THEN 800
640 RY = RY - 1
650  IF (RY < 5) OR (LY < 5) THEN  GOTO 680
660  PLOT LX,LY: PLOT RX,RY
670  GOTO 550
680  IF LY < 5 THEN WR = 1: GOTO 910
690  IF RY < 5 THEN WR = 2: GOTO 910
700  GOTO 880
710 LX = LX - 1
720  IF LX < 3 THEN LX = 3
730  GOTO 620
740 LX = LX + 1
750  IF LX > 17 THEN LX = 17
760  GOTO 620
770 RX = RX - 1
780  IF RX < 19 THEN RX = 19
790  GOTO 650
800 RX = RX + 1
810  IF RX > 34 THEN RX = 34
820  GOTO 650
830  IF F1 = 1 THEN LP = .5
840  IF F2 = 1 THEN RP = .5
850  COLOR= 0: PLOT LX,LY: PLOT RX,RY: COLOR= 34
860 CLK =  PEEK ( - 16336):CLK =  PEEK ( - 16336)
870  RETURN
880  GET A$: IF A$ = "X" THEN 900
890  GOTO 420
900  END
910  TEXT : HOME : PRINT : PRINT M$: PRINT
920  PRINT : PRINT "CONGRATULATIONS, ";
930  FLASH : PRINT N$(WR): NORMAL
940  FOR N = 1 TO 5: CALL  - 198: NEXT N
950  NORMAL : PRINT "YOUR ROACH WON THE RACE!!"
960  PRINT : PRINT "YOUR WINNINGS SO FAR ARE: $";
970 M(WR) = M(WR) + B(WR):LR = WR + 1
980  PRINT M(WR): PRINT
990  IF LR > 2 THEN LR = 1
1000 M(LR) = M(LR) - B(LR)
1010  PRINT : PRINT N$(LR)","
1020  PRINT "YOUR BANKROLL IS NOW DOWN TO $"M(LR)
```

```
1030  IF M(LR) > 1 THEN 1060
1040  PRINT "YOU'RE DONE!"
1050 M(1) = 100:M(2) = 100
1060  VTAB 20: PRINT "WANT TO RACE AGAIN (Y/N)? ";
1070  GET K$
1080  IF K$ = "Y" THEN 280
1090  IF K$ <  > "N" THEN 1070
1100  END
1110 M1$ = "YOUR ROACH WILL BE THE ONE ON THE "
1120 M2$ = "YOU CANNOT BET MORE THAN YOU HAVE!!"
1130 M3$ = "COME ON, NOW." +  CHR$ (13)
1140 M3$ = M3$ + "YOU HAVE TO BET SOMETHING ..."
1150  RETURN
```

Program 89 SUBMARINE ATTACK

Run silent.
Run deep.
Run to the head before you sleep.

—Ancient submariners' proverb

```
10  REM  ** SUBMARINE COMMAND **
20  REM
30  TEXT : HOME
40 M$ = "SUBMARINE COMMAND" +  CHR$ (13)
50  FOR K = 1 TO 40:L$ = L$ + "=": NEXT K
60 M$ = M$ + L$
70  HOME
80  PRINT M$
90  PRINT "YOU ARE A SUBMARINE COMMANDER ON A"
100  PRINT "SEARCH-AND-DESTROY MISSION."
110  PRINT : PRINT "YOU HAVE 12 TORPEDOES ON BOARD  AND "
120  PRINT "AS MANY SURFACE CHANCES TO DESTROY  "
130  PRINT "VESSELS."
140  PRINT : PRINT "USE THE SPACE BAR TO FIRE THE TORPEDOES"
150  PRINT "OR USE THE X KEY TO ABORT THE MISSION."
160  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
170  GET K$
180  HOME
190 HIT = 0:TRP = 12
200 SH = 1:TV = 21
210 FF = 0:HF = 0
220 SD = 0:TD = 0
230  GOSUB 880: GOSUB 850
240  GOSUB 690
250  VTAB 5: PRINT L$
260  VTAB 21: PRINT L$
270  GOSUB 730: GOSUB 600
280 K =  PEEK ( - 16384): POKE  - 16368,0
290  IF K < 128 THEN 350
300  IF K = 216 THEN  HOME : PRINT M$: GOTO 510
310  IF FF = 1 THEN 360
320 FF = 1
330 TRP = TRP - 1
340  GOSUB 880
350  IF FF = 0 THEN  GOSUB 710: GOTO 380
360  GOSUB 730
370  IF EF = 1 THEN 480
380  IF HF = 0 THEN 270
390  VTAB 4: HTAB SH
400  FLASH
410  PRINT "BOOM-BLANG-BLOOEY"
420  NORMAL
430  CALL  - 198: CALL  - 198
440  FOR T = 1 TO 400: NEXT T
450 HIT = HIT + 1
460  GOSUB 880
```

```
470  HOME : GOTO 200
480  HOME : PRINT M$
490  PRINT "YOU HAVE EXHAUSTED YOUR SUPPLY OF "
500  PRINT "TORPEDOES."
510  PRINT : PRINT "THE CURRENT MISSION IS COMPLETED WITH"
520  PRINT HIT" STRIKE";
530  IF HIT <  > 1 THEN  PRINT "S";
540  PRINT  CHR$ (46)
550  VTAB 21: PRINT "DO YOU WANT ANOTHER MISSION (Y/N)?";
560  GET K$
570  IF K$ = "Y" THEN 180
580  IF K$ = "N" THEN  HOME : END
590  GOTO 560
600  VTAB 4: HTAB SH
610  PRINT  SPC( 1)"<=>";
620  GOSUB 860
630  IF SD > 0 THEN SD = SD - 1: RETURN
640 SH = SH + 1
650  IF SH < 36 THEN 690
660  VTAB 4: HTAB SH - 1
670  PRINT  SPC( 4)
680 SH = 1
690  IF SD <  = 0 THEN SD =  INT (4 *  RND (1))
700  RETURN
710  FOR T = 1 TO 10: NEXT T
720  RETURN
730  VTAB TV: HTAB 24
740  IF TD > 0 THEN TD = TD - 1: RETURN
750  PRINT "!"
760  IF FF = 0 THEN 850
770  VTAB TV + 1: HTAB 24
780  PRINT  CHR$ (32)
790  GOSUB 860
800 TV = TV - 1
810  IF TV > 4 THEN 850
820  IF TRP <  = 0 THEN EF = 1: CALL  - 198: GOTO 870
830  VTAB 5: HTAB 24: PRINT "="
840 TV = 21:FF = 0: GOTO 730
850  IF TD <  = 0 THEN TD =  INT (4 *  RND (1))
860  IF TV < 6 AND SH > 20 AND SH < 24 THEN HF = 1
870  RETURN
880  VTAB 24: HTAB 6
890  PRINT HIT" HIT";
900  IF HIT <  > 1 THEN  PRINT "S";
910  VTAB 24: HTAB 15
920  PRINT TRP" TORPEDO";
930  IF TRP <  > 1 THEN  PRINT "ES";
940  PRINT " LEFT";
950  PRINT  SPC( 39 -  POS (0))
960  VTAB 22: HTAB 6
970  PRINT "SPACE=FIRE" SPC( 9)"X=ABORT"
980  RETURN
```

Program 90 MISSILE DEFENDER

Sparkle, sparkle little missile,
I sure do hope that you don't fizzle,
When we open silo's lid,
Built by the company with the lowest bid.

—From *Poems on Conjecture* (unpublished)

```
10  REM  ** BALLISTIC MISSILES **
20  REM
30  FOR K = 1 TO 9:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "BALLISTIC MISSILE GAME" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "DO YOU WANT TO SEE THE INSTRUCTIONS"
80  PRINT "(Y/N)? ";
90  GET K$
100  IF K$ = "N" THEN 290
110  IF K$ <  > "Y" THEN 90
120  HOME : PRINT M$
130  SPEED= 100
140  PRINT "THE ENEMY HAS JUST FIRED AN ICBM THAT"
150  PRINT "IS AIMED DIRECTLY AT YOUR DEFENSE SILO."
160  PRINT "ENEMY UNDERCOVER AGENTS HAVE ALREADY"
170  PRINT "DESTROYED THE GUIDANCE SYSTEMS IN YOUR"
180  PRINT "ANTI-BALLISTIC MISSILES; BUT YOU CAN"
190  PRINT "STILL AIM THEM IN THE OLD WAY --"
200  PRINT "BY SETTING A FIRING ANGLE BETWEEN"
210  PRINT "0 AND 90 DEGREES.": PRINT
220  FLASH : PRINT "WARNING:";: NORMAL
230  PRINT "IT IS INADVISABLE TO USE ANGLES"
240  PRINT "OF EXACTLY 0 AND 90 DEGREES."
250  PRINT : PRINT "GOOD LUCK, AND STAY CALM ..."
260  SPEED= 255
270  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
280  GET K$
290 TD =  INT ( RND (1) * 40 + 10)
300  HOME : PRINT M$
310 MR = 10
320  PRINT "MISSILE RANGE: "TD" KM"
330  PRINT : INVERSE
340  PRINT "ENTER THE FIRING ANGLE (0-90)";
350  NORMAL : PRINT  SPC( 1)
360 MR = MR - 1
370  INPUT "";A
380  IF A < 0 OR A > 90 THEN 320
390  IF A = 0 OR A = 90 THEN 480
400 A = A * 3.1415926535 / 180
410 D = 100 *  TAN (A)
420 E =  COS (A) *  COS (A)
430 D = D * E
440 DD =  INT (TD - D)
```

```
450  IF DD < 0 THEN A$ = "OVER"
460  IF DD > 0 THEN A$ = "UNDER"
470 DD =  ABS (DD)
480  FOR T = 9 TO 0 STEP  - 1
490 CLK =  PEEK ( - 16336):CLK =  PEEK ( - 16336)
500  VTAB 15: HTAB 5: INVERSE
510  PRINT "T MINUS "T" SECONDS AND COUNTING"
520  FOR W = 1 TO 500: NEXT W
530  NEXT T
540  VTAB 15: HTAB 5
550  FLASH : PRINT "** WE HAVE LIFT-OFF **";
560  NORMAL : PRINT  SPC( 40 -  POS (0)): PRINT
570  FOR K = 1 TO 5: CALL  - 198: NEXT K
580  IF A = 0 OR A = 90 THEN 940
590  FOR T = 1 TO 1000: NEXT T
600  IF DD < 10 THEN 830
610  HOME : PRINT M$
620  PRINT "YOUR MISSILE WAS "A$"RANGE BY "DD" KM"
630  IF MR <  > 1 THEN 680
640  PRINT : PRINT "YOU HAVE ONLY 1 MISSILE REMAINING."
650  INVERSE : PRINT "THIS IS IT -- YOUR LAST CHANCE!"
660  NORMAL
670  GOTO 690
680  PRINT : PRINT "YOU NOW HAVE "MR" MISSILES REMAINING"
690  IF MR = 0 THEN 790
700 TD = TD - 1
710  IF TD < 5 THEN 770
720  PRINT : PRINT "THE ICBM IS GETTING CLOSER ..."
730  FOR T = 1 TO 100:CK =  PEEK ( - 16336): NEXT T
740  FOR T = 1 TO 3000: NEXT T
750  HOME : PRINT M$
760  GOTO 320
770  HOME : PRINT M$: PRINT
780  FOR K = 1 TO 5: CALL ( - 198): NEXT K
790  GOSUB 1010: VTAB 10
800  PRINT "ALAS. THE ENEMY MISSILE REACHED ITS"
810  PRINT "DESTINATION -- YOUR DEFENSE SILO."
820  GOTO 890
830  HOME : PRINT M$: PRINT
840  FOR K = 1 TO 10: CALL  - 198: NEXT K
850  PRINT : PRINT
860  FLASH
870  PRINT "YOU HAVE DESTROYED THE ICBM"
880  NORMAL
890  VTAB 21: PRINT "WANT TO PLAY AGAIN (Y/N)? ";
900  GET K$
910  IF K$ = "Y" THEN 290
920  IF K$ <  > "N" THEN 900
930  HOME : END
940  GOSUB 1010
950  HTAB 1: VTAB 15
960  PRINT "YOU HAVE SHOT THE MISSILE AT YOURSELF!"
970  FOR K = 1 TO 5: CALL  - 198: NEXT K
980  FOR T = 1 TO 500: NEXT T
990  PRINT "YOU FAIL THE EXERCISE."
1000  GOTO 890
```

```
1010  POKE  - 16304,0: POKE  - 16302,0
1020  FOR N = 1 TO 25
1030  POKE  - 16297,0
1040  FOR T = 0 TO 10
1050 X =  PEEK ( - 16336)
1060  NEXT T
1070  POKE  - 16298,0
1080  NEXT N
1090  TEXT : RETURN
```

Program 91 HACKERS' AID

Buy a modem, and the world's your oyster.

—Anonymous (by choice)

Author's note: This is a long program, I know. But it is sure great for pulling the leg of some folks who know enough to be harmful, but not enough to be wise.

```
10  REM  ** HACKERS AID **
20  REM
30  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "HACKERS AID" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "-": NEXT K
60  FOR N = 1 TO 8: READ CN$(N): NEXT N
70 Y$ =  RIGHT$ (M$,40)
80  HOME : PRINT M$
90  PRINT "SELECT A TARGET SYSTEM (1-7)
100  PRINT "OR EXIT (8)
110  PRINT
120  FOR N = 1 TO 8
130  PRINT  TAB( 5)"("N") "CN$(N)
140  NEXT N
150  PRINT X$
160  GET K$
170  IF K$ < "1" OR K$ > "8" THEN 160
180 CN =  VAL (K$)
190  IF CN < 7 THEN 240
200  IF CN = 8 THEN  HOME : END
210  PRINT X$
220  PRINT "ENTER NAME OF 'OTHER' TARGET SYSTEM:"
230  INPUT "";CN$(7)
240  HOME : PRINT M$
250  PRINT "PHONE INTERFACING MODE:"
260  INVERSE : PRINT CN$(CN): NORMAL
270  HTAB 1: VTAB 8
280  PRINT "LOCATE YOUR TELEPHONE NEAR THE CRT."
290  HTAB 1: VTAB 21
300  PRINT "STRIKE ANY KEY WHEN READY ....";
310  GET K$
320  HTAB 1: VTAB 8
330  PRINT "NOW TESTING LOCAL PHONE INTERFACE.";
340  PRINT  SPC( 39 -  POS (0))
350  PRINT
360  FLASH : PRINT "PLEASE WAIT";: NORMAL
370  PRINT  SPC( 39 -  POS (0)): PRINT
380  FOR T = 1 TO 1000 *  RND (1) + 1000: NEXT T
390  IF T < 1500 THEN 460
400  HTAB 1: VTAB 8: CALL  - 198
410  FLASH : PRINT "BAD LOCAL CONNECTION";: NORMAL
420  PRINT  SPC( 39 -  POS (0))
430  PRINT : PRINT "ADJUST THE PHONE'S POSITION.";
440  PRINT  SPC( 39 -  POS (0))
```

```
450  GOTO 290
460  HOME : PRINT M$
470  INVERSE : PRINT "GOOD LOCAL INTERFACE": NORMAL
480  PRINT
490  PRINT "SELECT NUMBER OF LONG-DISTANCE NODES"
500  PRINT "(1-9)."
510  HTAB 1: VTAB 18
520  PRINT : PRINT "NOTE: THE LARGER THE NUMBER OF NODES,"
530  PRINT "THE SMALLER THE RISK OF A SUCCESSFUL"
540  PRINT "TELEPHONE TRACE TO YOU."
550  HTAB 1: VTAB 12
560  GET K$
570  IF K$ < "1" OR K$ > "9" THEN 560
580 NN =  VAL (K$)
590  PRINT NN" NODES SELECTED."
600  CALL  - 958
610  HTAB 1: VTAB 21
620  PRINT "STRIKE ANY KEY TO BEGIN AUTOMATIC"
630  PRINT "TELEPHONE NETWORKING ...";
640  GET K$
650  HOME : PRINT "PHONE FREAKING FOR"
660  INVERSE : PRINT CN$(CN): NORMAL
670  PRINT Y$
680 NT = 0
690  HTAB 1: VTAB 8
700 X =  INT (738 *  RND (1)) + 250
710 Y =  INT (738 *  RND (1)) + 250
720 Z =  INT (8999 *  RND (1)) + 1000
730 CH =  PEEK (36) + 1:CV =  PEEK (37) + 1
740  HTAB 18: VTAB 6
750  PRINT "SEARCHING" SPC( 40 -  POS (0))
760  HTAB CH: VTAB CV
770  IF 20 *  RND (1) > 1 THEN 800
780 NT = NT + 1: CALL  - 198:CF = 1
790  IF CF = 1 THEN  INVERSE
800  PRINT "("X")"Y"-"Z"
810  NORMAL
820  IF CF = 0 THEN 1020
830 CH =  PEEK (36) + 1:CV =  PEEK (37) + 1
840  HTAB 18: VTAB 6
850  INVERSE
860  PRINT "DIALING";
870  NORMAL : PRINT  SPC( 40 -  POS (0))
880  FOR K = 1 TO 2: FOR J = 1 TO 3
890  GOSUB 1110
900  NEXT J
910  GOSUB 1140
920  NEXT K
930  FOR J = 1 TO 4: GOSUB 1110: NEXT J
940  HTAB 18: VTAB 6
950  FLASH : PRINT "RINGING";
960  NORMAL : PRINT  SPC( 40 -  POS (0))
970  FOR T = 1 TO 2000 + 1000 *  RND (1): NEXT T
980  HTAB 18: VTAB 4
990  PRINT NT" OF "NN" NODES COMPLETED."
1000 CF = 0
```

```
1010  HTAB CH: VTAB CV
1020  IF NT >  = NN THEN 1050
1030  IF  PEEK (37) >  = 19 THEN 690
1040  GOTO 700
1050  HTAB 1: VTAB 6
1060  INVERSE
1070  PRINT "NOW CONFIRMING. PLEASE WAIT ...";
1080  NORMAL : PRINT  SPC( 40 -  POS (0))
1090  FOR T = 1 TO 4000: NEXT T
1100  GOTO 1160
1110  FOR R = 1 TO 30
1120  IF R < 3 THEN G =  PEEK ( - 16336)
1130  NEXT R
1140  FOR T = 1 TO 100: NEXT T
1150  RETURN
1160  HOME : PRINT M$
1170  PRINT "SUCCESSFUL "NN"-NODE LINK TO"
1180  INVERSE : PRINT CN$(CN): NORMAL
1190  PRINT :
1200  PRINT "DO YOU HAVE A PASSWORD FOR THE TARGET"
1210  PRINT "SYSTEM (Y/N)? ";
1220  GET K$
1230  IF K$ = "N" THEN 1380
1240  IF K$ <  > "Y" THEN 1220
1250  PRINT
1260  PRINT : PRINT "ENTER THE PASSWORD:"
1270  INPUT "";PW$
1280  HTAB 1: VTAB 21
1290  INVERSE : PRINT "NOW TESTING "PW$: NORMAL
1300  PRINT "PLEASE WAIT ..."
1310  FOR T = 1 TO 2500: NEXT T
1320  FOR N = 1 TO 4: CALL  - 198: NEXT N
1330  HTAB 1: VTAB 21
1340  FLASH : PRINT "INVALID PASSWORD";: NORMAL
1350  PRINT  SPC( 39 -  POS (0)): PRINT
1360  PRINT "STRIKE ANY KEY FOR AUTO-SELECT MODE ...";
1370  GET K$
1380  HOME : PRINT "PASSWORD AUTO-SEARCH FOR"
1390  INVERSE : PRINT CN$(CN): NORMAL
1400  PRINT Y$
1410 NN =  INT (10 / CN *  RND (1) + 8 - CN)
1420 NT = 0
1430  IF CN > 2 THEN 1480
1440  PRINT "PASSWORDS FOR THIS HOST ARE CHANGED"
1450  PRINT "HOURLY. THIS MAY TAKE SOME TIME."
1460  GOTO 1480
1470  FOR T = 1 TO 4000: NEXT T
1480  HTAB 1: VTAB 8
1490 X =  INT (26 *  RND (1) + 65)
1500 Y =  INT (26 *  RND (1) + 65)
1510 Z =  INT (8999 *  RND (1)) + 1000
1520 CH =  PEEK (36) + 1:CV =  PEEK (37) + 1
1530  HTAB 18: VTAB 7
1540  PRINT "SEARCHING" SPC( 40 -  POS (0))
1550  HTAB CH: VTAB CV
1560  IF 20 *  RND (1) > 1 THEN 1590
```

```
1570 NT = NT + 1: CALL  - 198:CF = 1
1580  IF CF = 1 THEN  INVERSE
1590  IF CN > 2 THEN  PRINT X"-"Y"-"Z: GOTO 1610
1600  PRINT  CHR$ (X); CHR$ (Y)":"Z: GOTO 1610
1610  NORMAL
1620  IF CF = 0 THEN 1750
1630 CH =  PEEK (36) + 1:CV =  PEEK (37) + 1
1640  HTAB 18: VTAB 7
1650  INVERSE
1660  PRINT "TRYING";
1670  NORMAL : PRINT  SPC( 40 -  POS (0))
1680  FOR T = 1 TO 3000: NEXT T
1690  HTAB 18: VTAB 7
1700  INVERSE : PRINT "CONFIRMING";
1710  NORMAL : PRINT  SPC( 40 -  POS (0))
1720  FOR T = 1 TO 2000 + 1000 *  RND (1): NEXT T
1730 CF = 0
1740  HTAB CH: VTAB CV
1750  IF NT >  = NN THEN 1780
1760  IF  PEEK (37) >  = 19 THEN 1480
1770  GOTO 1490
1780  HTAB CH: VTAB CV: INVERSE
1790  PRINT "PASSWORD FOUND AND CONFIRMED."
1800  NORMAL : HTAB 1: VTAB 21
1810  PRINT "STRIKE ANY KEY TO CONTINUE ... ";
1820  GET K$
1830  HOME : PRINT M$
1840  PRINT "LINK IS ESTABLISHED FOR"
1850  INVERSE : PRINT CN$(CN): NORMAL
1860  HTAB 1: VTAB 20
1870  PRINT "UNAUTHORIZED ACCESS IS ILLEGAL. ARE YOU"
1880  PRINT "SURE YOU WANT TO PROCEDE (Y/N)? ";
1890  GET K$
1900  IF K$ = "N" THEN 80
1910  IF K$ <  > "Y" THEN 1890
1920  SPEED= 100
1930  FOR N = 1 TO 21: PRINT  CHR$ (32): NEXT N
1940  HOME
1950  PRINT CN$(CN): PRINT
1960  PRINT PW$" FILE ";
1970  PRINT  INT (1000 *  RND (1)) / 1000
1980  PRINT : PRINT "SYS GBAK 144."
1990  PRINT "AUTHORIZED PERSONNEL ONLY"
2000  PRINT : PRINT
2010  SPEED= 255
2020  GOTO 2140
2030  IF 4 *  RND (1) > 1 THEN 2140
2040  HOME : PRINT M$
2050  FLASH : PRINT "WARNING!": NORMAL
2060  FOR N = 1 TO 8: CALL  - 198: NEXT N
2070  PRINT "TELEPHONE TRACE IS ON ..."
2080  FLASH
2090  PRINT "ABORT QUICKLY!"
2100  NORMAL
2110  HTAB 1: VTAB 21
2120  PRINT "STRIKE THE X KEY TO ABORT ...";
```

```
2130  GET K$: GOTO 80
2140  FOR N = 1 TO 500 *  RND (1) + 500
2150  PRINT  CHR$ ( PEEK (1000 + N));
2160  NEXT N
2170  INVERSE : PRINT "PARITY ERROR": NORMAL
2180  GOTO 2030
2190  DATA  DEPARTMENT OF DEFENSE
2200  DATA  INTERNAL REVENUE SERVICE
2210  DATA  IBM CORPORATION
2220  DATA  GENERAL MOTORS CORPORATION
2230  DATA  AMERIBANK
2240  DATA  STANFORD UNIVERSITY
2250  DATA  OTHER (TO SPECIFY)
2260  DATA  EXIT THE PROGRAM
```

Program 92 SEA BATTLE

Dum-ta-da-dummmm
Ta-da-ta-dum-dum
Tee-dee-ta-dum

—From the theme of *Victory at Sea*

```
10  REM  ** BATTLESHIP GAME **
20  REM
30  FOR K = 1 TO 23:H$ = H$ +  CHR$ (32): NEXT K
40 H$ = H$ + "A B C D E F G H"
50  DIM CMP$(10,10): DIM PMP$(10,10)
60 M$ =  LEFT$ (H$,15)
70 M$ = M$ + "BATTLESHIP" +  CHR$ (13)
80  FOR K = 1 TO 39:Y$ = Y$ + "*": NEXT K
90 M$ = M$ + Y$
100  TEXT : HOME : PRINT M$: PRINT
110  PRINT "WANT TO SEE THE INSTRUCTIONS (Y/N)?";
120  GET K$
130  IF K$ = "N" THEN 320
140  IF K$ <  > "Y" THEN 120
150  HOME : PRINT M$: PRINT
160  SPEED= 80
170  PRINT "THIS IS A COMPUTERIZED VERSION OF THE"
180  PRINT "BOARD GAME, 'BATTLESHIP.'"
190  PRINT : PRINT "YOUR OBJECTIVE IS TO SINK THE COM-"
200  PRINT "PUTER'S SHIPS BY FIRING AT COORDINATES"
210  PRINT "ON A MAP.": PRINT
220  PRINT "BUT THERE ARE A COUPLE OF CATCHES."
230  PRINT "FIRST, YOU DON'T KNOW THE COORDINATES"
240  PRINT "OF THE ENEMY SHIPS. AND SECOND, THE"
250  PRINT "ENEMY IS FIRING BACK AT YOU!": PRINT
260  PRINT "YOU AND THE COMPUTER BOTH HAVE 5 SHIPS"
270  PRINT "AT THE OUTSET. THE FIRST TO SINK ALL"
280  PRINT "OF THE OPPONENT'S SHIPS WINS THE GAME."
290  SPEED= 255
300  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
310  GET K$
320 E$ = "+":PS = 5:CS = 5
330  FOR R = 1 TO 8: FOR C = 1 TO 8
340 PMP$(R,C) = E$:CMP$(R,C) = E$
350  NEXT C: NEXT R
360  FOR K = 1 TO 5
370 R =  INT ( RND (1) * 8 + 1)
380 C =  INT ( RND (1) * 8 + 1)
390 PMP$(R,C) = "*"
400  NEXT K
410  FOR K = 1 TO 5
420 R =  INT ( RND (1) * 8 + 1)
430 C =  INT ( RND (1) * 8 + 1)
440 CMP$(R,C) = "*"
450  NEXT K
460  HOME : PRINT M$
```

```
470  PRINT H$
480  VTAB 21: PRINT Y$
490  PRINT "*=YOUR GOOD SHIPS" SPC( 4)
500  PRINT "%=YOUR DEAD SHIPS" SPC( 4)
510  HTAB 1: VTAB 23: PRINT "+=UNTRIED AREAS"
520  VTAB 23: HTAB 22: PRINT "<RETURN>=EXIT"
530  VTAB 5
540  FOR R = 1 TO 8: HTAB 22: PRINT R;
550  FOR C = 1 TO 8
560  HTAB C * 2 + 22
570  PRINT PMP$(R,C) +  CHR$ (32);: NEXT C
580  PRINT
590  NEXT R
600  VTAB 6: PRINT "COMPUTER HAS"
610  PRINT : PRINT CS" SHIP";
620  IF CS <  > 1 THEN  PRINT "S";
630  HTAB 1: VTAB 10
640  PRINT "YOU HAVE"
650  PRINT : PRINT PS" SHIP";
660  IF PS <  > 1 THEN  PRINT "S";
670  HTAB 1: VTAB 15
680  PRINT "WHERE DO YOU WISH TO FIRE?"
690  VTAB 17: PRINT "ROW (1-8)";
700  GET K$
710  IF K$ =  CHR$ (13) THEN 1120
720  IF K$ < "1" OR K$ > "8" THEN 700
730 PR =  VAL (K$)
740  PRINT PR
750  HTAB 15: VTAB 17
760  PRINT "COLUMN (A-H)";
770  GET K$
780  IF K$ =  CHR$ (13) THEN 1120
790  IF K$ < "A" OR K$ > "H" THEN 770
800 PC$ = K$
810  PRINT PC$
820 PC =  ASC (PC$) - 64
830  IF PC > 8 OR PC < 1 THEN 750
840  IF PMP$(PR,PC) = "*" THEN 1130
850  IF PMP$(PR,PC) <  > "+" THEN 880
860 PMP$(PR,PC) =  CHR$ (32)
870  CALL  - 198
880  IF CMP$(PR,PC) <  > "*" THEN 910
890 PMP$(PR,PC) = "#":CMP$(PR,PC) = "+":CS = CS - 1
900  GOSUB 970
910 CC =  INT ( RND (1) * 8 + 1):CR =  INT ( RND (1) * 8 + 1)
920  IF PMP$(CC,CR) <  > "*" THEN 960
930 PMP$(CC,CR) = "%"
940 PS = PS - 1
950  GOSUB 970
960  GOTO 460
970  FOR K = 1 TO 5
980  CALL ( - 198)
990  NEXT K
1000  IF PS > 0 THEN 1070
1010  HOME : PRINT M$
1020  PRINT "*** SORRY...***"
```

```
1030  PRINT : PRINT "I JUST SANK YOUR LAST BATTLESHIP"
1040  PRINT : PRINT "WOULD YOU LIKE TO PLAY AGAIN (Y OR N)"
1050  GET K$: IF K$ = "N" THEN 1120
1060  IF K$ = "Y" THEN 320
1070  IF CS > 0 THEN 1110
1080  HOME : PRINT M$
1090  PRINT "*** YOU WIN ***"
1100  GOTO 1040
1110  RETURN
1120  HOME : END
1130 PS = PS - 1: GOSUB 970
1140  POKE 36,18: PRINT "YOU JUST SANK"
1150  POKE 36,18: PRINT "YOUR OWN SHIP"
1160  FOR T = 1 TO 1000: NEXT T
1170 PMP$(PR,PC) = "%"
1180  GOTO 880
```

Program 93 MINER

Oh, ----! So much for the canary!

—From *A Treasury of Famous Last Words*

```
10  REM  ** COAL MINER **
20  REM
30  FOR K = 1 TO 15:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "COAL MINER" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "YOU ARE A MINER WHO IS LOST IN A DEEP"
80  PRINT "MINE. IT IS TOO DARK TO SEE ANYTHING,"
90  PRINT "BUT YOU ARE AN EXPERT DIGGER. YOU CAN"
100  PRINT "DIG THROUGH ANYTHING BUT BIG ROCKS."
110  PRINT : PRINT "OBVIOUSLY, YOUR OBJECTIVE IS TO DIG"
120  PRINT "YOUR WAY OUT OF THE MINE, AND TO DO THE"
130  PRINT "JOB AS EFFICIENTLY AS POSSIBLE."
140  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
150  GET K$
160  HOME : PRINT M$
170  DIM R(39,39)
180 SCR = 0:ST = 0
190  GOSUB 680
200  FOR K = 1 TO 400
210 X =  INT ( RND (1) * 39)
220 Y =  INT ( RND (1) * 39)
230 R(X,Y) = 57
240  NEXT K
250 R(2,2) = 0
260  GR : COLOR= 8
270  FOR Y = 0 TO 39
280  HLIN 0,39 AT Y
290  NEXT Y
300  HOME : PRINT  TAB( 3)"<RETURN>=EXIT";
310  PRINT  SPC( 3)"U=UP" SPC( 5)"R=RIGHT"
320  PRINT  SPC( 3)"STEPS="ST;
330  PRINT  TAB( 19)"D=DOWN" SPC( 3)"L=LEFT"
340  COLOR= 2: PLOT 37,37
350 X = 37:NX = 37:Y = 37:NY = 37
360  COLOR= 5: PLOT 2,2
370  GET K$
380 ST = ST + 1
390  VTAB 22: HTAB 3
400  INVERSE : PRINT ST" STEPS";: NORMAL
410  IF K$ <  > "U" THEN 430
420 NY = NY - 1: GOTO 510
430  IF K$ <  > "D" THEN 450
440 NY = NY + 1: GOTO 510
450  IF K$ <  > "L" THEN 470
460 NX = NX - 1: GOTO 510
470  IF K$ <  > "R" THEN 490
480 NX = NX + 1: GOTO 510
```

```
490  IF K$ <  > CHR$ (13) THEN 370
500  TEXT : HOME : PRINT M$: GOTO 880
510  IF NX <  = 38 AND NY <  = 38 THEN 530
520 NY = Y:NX = X:ST = ST - 1: GOTO 370
530  IF NX >  = 0 AND NY >  = 0 THEN 550
540 NY = Y:NX = X:ST = ST - 1: GOTO 370
550  IF R(NY,NX) <  > 57 THEN 640
560 ST = ST - 1
570  VTAB 22: HTAB 3: INVERSE
580  PRINT "#$%&@ - ROCK!!": NORMAL
590  CALL  - 198
600  FOR T = 1 TO 400: NEXT T
610  VTAB 22: HTAB 3: PRINT "STEPS="ST;
620  PRINT  SPC( 7)
630 NY = Y:NX = X: GOTO 370
640  COLOR= 0: PLOT X,Y
650  COLOR= 2: PLOT NX,NY
660 X = NX:Y = NY: IF X = 2 AND Y = 2 THEN 740
670  GOTO 370
680  PRINT "PLEASE WAIT: I'M SETTING UP THE MINE."
690  FOR X = 0 TO 39: FOR Y = 0 TO 39
700 R(X,Y) = 0
710  NEXT Y: NEXT X
720  PRINT : PRINT "ALMOST DONE."
730  RETURN
740  TEXT : HOME : PRINT M$
750  PRINT "AHH, FRESH AIR!"
760  FOR K = 1 TO 5: CALL ( - 198): NEXT K
770  PRINT : PRINT "YOU DID IT IN "ST" STEPS."
780  FOR K = 1 TO 100
790 X =  INT ( RND (1) * 39):Y =  INT ( RND (1) * 39)
800 R(X,Y) = 57: NEXT K
810 ST = 0
820  VTAB 21: PRINT "WANT TO PLAY AGAIN (Y/N)? ";
830 SCR = SCR + 1
840  GET K$: IF K$ = "Y" THEN 260
850  IF K$ <  > "N" THEN 840
860  HOME : PRINT M$
870  IF SCR = 1 THEN  PRINT "YOU MADE IT THROUGH THE MINE": GOTO 930
880  PRINT "YOU MADE IT OUT OF "SCR" MINE";
890  IF SCR <  > 1 THEN  PRINT "S";
900  PRINT  CHR$ (46)
910  IF SCR < 4 THEN 930
920  PRINT : PRINT "THAT'S PRETTY GOOD."
930  END
```

Program 94 ASTEROIDS

It may be that the race is not always to the swift, nor the battle to the strong—but that's the way to bet.

—Damon Runyon

```
10  REM  ** ASTEROIDS **
20  REM
30  FOR K = 1 TO 15:M$ = M$ +  CHR$ (32)
40 M$ = M$ + "ASTEROIDS" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ +  CHR$ (42): NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "YOUR MISSION IS TO NAVIGATE YOUR CRAFT"
80  PRINT "THROUGH AN ASTEROID BELT. YOU ARE"
90  PRINT "ABLE TO MOVE ONLY UP AND DOWN -- AND"
100  PRINT "EACH WAVE OF ASTEROIDS BECOMES MORE"
110  PRINT "DEADLY."
120  PRINT : PRINT
130  PRINT "SELECT YOUR PILOT RANKING:": PRINT
140  PRINT  TAB( 5)"(B)EGINNER"
150  PRINT  TAB( 5)"(E)XPERT"
160  GET DL$
170  IF DL$ = "B" THEN DL = 150: GOTO 200
180  IF DL$ = "E" THEN DL = 75: GOTO 200
190  GOTO 160
200  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
210  GET K$
220  HOME : GR
230  PRINT : PRINT M$
240  PRINT "U=UP" SPC( 4)"D=DOWN";
250  HTAB 20: PRINT "ANY KEY TO START";
260 PH = 0
270  COLOR= 25
280 D = 0
290  FOR C = 1 TO 39
300 R =  INT ( RND (1) * 30)
310  PLOT C,R
320 R =  INT ( RND (1) * 40)
330  PLOT C,R
340  NEXT C
350  COLOR= 0:C = 2:R = 10: PLOT C,R
360 R = 10: COLOR= 170
370 C = 1: PLOT C,R
380  COLOR= 0:C = 2: PLOT C,R
390  IF PH = 0 THEN  GET K$:PH = 1
400  HTAB 20: PRINT  SPC( 39 -  POS (0))
410  FOR C = 2 TO 39
420  COLOR= 0: PLOT 1,R
430  COLOR= 170
440  FOR XX = 1 TO 2:CLK =  PEEK ( - 16636): NEXT XX
450  IF  SCRN( C,R) <  > 0 THEN 590
460  PLOT C,R
470  POKE  - 16368,0
```

```
480  FOR T = 1 TO DL: NEXT T
490  COLOR= 0: PLOT C,R
500 K =  PEEK ( - 16384)
510  IF K = 196 THEN R = R + 1
520  IF K = 213 THEN R = R - 1
530  NEXT C
540  COLOR= 25
550  FOR C = 1 TO 39:R =  INT ( RND (1) * 40)
560  PLOT C,R
570  NEXT C
580 D = D + 10000: GOTO 360
590  HTAB 15: VTAB 22
600  FLASH : PRINT "COLLISION";: NORMAL
610  FOR T = 1 TO 100
620  IF T / 10 =  INT (T / 10) THEN  CALL  - 198
630  NEXT T
640  TEXT : HOME : PRINT M$
650 D = D + 250 * C
660  PRINT "YOU TRAVELED "D" KILOMETERS"
670  PRINT "BEFORE LOSING YOUR HEALTH."
680  FOR T = 1 TO 1500: NEXT T
690  VTAB 21
700  PRINT "WOULD YOU LIKE TO TRY AGAIN (Y/N)? ";
710  GET K$: IF K$ = "Y" THEN 220
720  IF K$ <  > "N" THEN 710
730  HOME : END
```

Program 95 WILDCATTER

Thar's oil in them thar hills.

—Anonymous

```
10  REM  ** WILDCATTER **
20  REM
30  FOR K = 1 TO 15:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "WILDCATTER" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT "YOU ARE AN OLD-WEST KIND OF OILMAN WHO"
80  PRINT "IS HOPING TO GET RICH BY DRILLING FOR"
90  PRINT "OIL AT HIGHLY SPECULATIVE LOCATIONS."
100  PRINT : PRINT "A BENEVOLENT BENEFACTOR HAS STAKED YOU"
110  PRINT "TO THE TUNE OF $2-MILLION."
120  PRINT : PRINT "YOU HAVE FREE ACCESS TO 100 DIFFERENT"
130  PRINT "DRILLING LOCATIONS. THE DRILLING COST"
140  PRINT "IS ON THE ORDER OF $50 PER FOOT."
150  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN THE VENTURE ...";
160  GET K$
170  HOME : PRINT M$
180  PRINT "PLEASE WAIT A MOMENT ..."
190  DIM L(100)
200  FOR K = 1 TO 100
210 L(K) =  INT ( RND (1) * 10000 + 4000)
220  NEXT K
230 AC = 2000000
240 R = 0
250  HOME : PRINT M$
260  PRINT "SELECT A DRILLING LOCATION (1-100):"
270  PRINT : INPUT PL
280 PL =  INT (PL)
290  IF PL > 0 AND PL < 101 THEN 310
300  PRINT "0 THRU 100, PLEASE. TRY AGAIN ...": GOTO 270
310 D = L(PL)
320  HOME : PRINT M$: PRINT
330 NC = AC
340  VTAB 6: PRINT "YOU HAVE $"NC
350  VTAB 10: PRINT "YOUR WELL IS "R" FEET DEEP"
360  FOR T = 1 TO 400: NEXT T
370 CLK =  PEEK ( - 16336):CLK =  PEEK ( - 16336)
380 R = R + 500:WC = R * 50
390  IF R >  = 10000 THEN 560
400 NC = AC - WC
410  IF R < D THEN 340
420  HOME : PRINT M$
430  FOR K = 1 TO 7: CALL ( - 198): NEXT K
440  PRINT : PRINT "*** YOU JUST STRUCK OIL ***"
450 WD = 100000 *  INT (8 *  RND (1) + 7)
460  PRINT : PRINT "YOU MADE $"WD" DOLLARS FROM THE WELL"
470 AC = NC + WD
480 L(PL) = 11000
```

```
490  PRINT : PRINT "YOU NOW HAVE $"AC
500  FOR T = 1 TO 500: NEXT T
510  VTAB 21: PRINT "WANT TO TRY AGAIN (Y/N) ";
520  GET K$
530  IF K$ = "Y" THEN 240
540  IF K$ <  > "N" THEN 520
550  HOME : END
560  HOME : PRINT M$
570  FOR K = 1 TO 3: CALL ( - 198): NEXT K
580  PRINT : PRINT "YOU HAVE YOURSELF A DRY HOLE"
590  PRINT : PRINT "YOU LOST $"WC" ON THIS."
600 AC = AC - WC
610  PRINT : PRINT "YOU STILL HAVE $"AC
620  IF AC < 0 THEN 640
630  GOTO 510
640  PRINT : PRINT "YOU HAVE GONE BROKE, AND YOUR BENE-"
650  PRINT "FACTOR IS LOOKING FOR YOU. I STRONGLY"
660  PRINT "SUGGEST YOU AVOID THE OIL BUSINESS"
670  PRINT "IN THE FUTURE."
680  VTAB 21: END
```

Program 96 MOON LANDER

Hey, buddy. Spare a quarter for a game?

—Overheard outside a video arcade in Cincinnati

```
10  REM   ** LUNAR-LANDER GAME **
20  REM
30  FOR N = 0 TO 13:X$ = X$ +  CHR$ (32): NEXT N
40  FOR N = 0 TO 39:Y$ = Y$ + "%": NEXT N
50 M$ = X$ + "LUNAR LANDER" +  CHR$ (13) + Y$
60  TEXT : HOME : PRINT M$
70  SPEED= 90
80  VTAB 4: PRINT "YOU ARE THE PILOT OF A LUNAR-LANDER"
90  PRINT "MODULE. YOUR OBJECTIVE IS TO LAND THE"
100  PRINT "MODULE AND CREW SAFELY ON THE SURFACE"
110  PRINT "OF THE MOON.": PRINT
120  PRINT "YOU MUST RETRO-FIRE YOUR ENGINES IN"
130  PRINT "ORDER TO CONTROL YOUR RATE OF DESCENT."
140  PRINT "THERE IS, OF COURSE, THE RISK OF CRASH-"
150  PRINT "ING; EITHER BECAUSE THE RATE OF DESCENT"
160  PRINT "IS TOO HIGH, OR YOU'VE BURNED ALL THE"
170  PRINT "AVAILABLE FUEL.": PRINT
180  PRINT "THREE THINGS CAN HAPPEN TO YOU, AND"
190  PRINT "TWO OF THEM ARE BAD. KEEP COOL, AND"
200  PRINT "CONTROL THE MODULE BY ENTERING BURN-"
210  PRINT "RATE VALUES. INCIDENTALLY, USING": INVERSE : PRINT "BURN ";
220  PRINT "RATES OF ";: FLASH : PRINT "75";
230  NORMAL : INVERSE : PRINT " OR MORE DESTROYS THE"
240  PRINT "ENGINES!!": NORMAL : PRINT
250  VTAB 22: SPEED= 255
260  PRINT
270  PRINT "STRIKE ANY KEY TO BEGIN ...";
280  GET K$
290 A$ = "ALTITUDE:"
300 S$ = "SPEED:"
310 F$ = "FUEL:"
320 B$ = "BURN RATE:"
330 R$ = "RISING"
340 D$ = "DESCENDING"
350 A = 500:F = 250:S = 50:BR = 0
360 I$ =  LEFT$ (X$,12)
370 I$ = I$ + "INSTRUMENT PANEL" +  CHR$ (13)
380  FOR K = 1 TO 40:I$ = I$ + "=": NEXT K
390  HOME
400  VTAB 4: PRINT I$
410  PRINT : PRINT  TAB( 4)A$,A
420  PRINT : PRINT  TAB( 4)F$,F
430  PRINT : PRINT  TAB( 4)S$,S
440  PRINT : PRINT  TAB( 4)B$,BR
450  IF F <  = 0 THEN BR = 0: GOTO 530
460  PRINT : PRINT "YOU ARE ";
470  IF S >  = 0 THEN  PRINT D$
480  IF S < 0 THEN  PRINT R$
```

```
490  FOR K = 1 TO BR * 5:CK =  PEEK ( - 16336): NEXT K
500  VTAB 20: INPUT "ENTER BURN RATE ";BR
510  IF BR < 0 THEN  CALL  - 198: GOTO 500
520  IF BR >  = 75 THEN 780
530 F = F - BR: IF F <  = 0 THEN 840
540 S = S + 10 - BR:A = A - S
550 IM = (A + S * 2 + 10) / 10
560  IF A >  = 0 THEN 640
570  CALL  - 198: CALL  - 198
580  HOME : PRINT M$
590  PRINT : PRINT : PRINT : INVERSE
600  PRINT "YOU HAVE BURIED THE SHIP "IM" METERS"
610  PRINT "INTO THE LUNAR SURFACE."
620  NORMAL
630  GOTO 710
640  IF IM > 5 THEN 390
650  HOME : PRINT M$
660  VTAB 15: FLASH : PRINT "** YOU HAVE LANDED THE SHIP **"
670  FOR N = 1 TO 10
680  CALL  - 198
690  FOR T = 1 TO 200: NEXT T
700  NEXT N: NORMAL
710  FOR N = 1 TO 3000: NEXT N
720  HOME : PRINT M$
730  PRINT "DO YOU WANT TO TRY AGAIN (Y/N)? ";
740  GET K$
750  IF K$ = "N" THEN  HOME : END
760  IF K$ = "Y" THEN 250
770  GOTO 740
780  HOME : GOSUB 890
790  HOME : PRINT M$: PRINT
800  PRINT : PRINT "BURN RATE IS TOO HIGH." SPC( 4)
810  PRINT : FLASH : PRINT "THIS HAS COMPLETELY DESTROYED YOUR
820  NORMAL : PRINT : PRINT
830  GOTO 710
840  PRINT : FLASH : PRINT "YOU HAVE EXHAUSTED YOUR FUEL SUPPLY
850  NORMAL
860  FOR T = 1 TO 160: NEXT T
870  FOR CK = 1 TO 3: CALL  - 198: NEXT CK
880  GOTO 540
890  POKE  - 16304,0: POKE  - 16302,0
900  FOR N = 1 TO 28
910  POKE  - 16297,0
920  FOR T = 0 TO 10
930 CLK =  PEEK ( - 16336)
940  NEXT T
950  POKE  - 16298,0
960  NEXT N
970  TEXT : RETURN
```

Program 97 STOCK MARKET

"Dow Jones is up today."
"Oh, yeh? How long was he in bed?"

—Overheard at a bus stop in Miami Beach

```
10  REM  ** STOCK MARKET **
20  REM
30  FOR K = 1 TO 14:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "STOCK MARKET" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT : PRINT : PRINT "THIS IS A ONE PLAYER GAME WHERE YOU "
80  PRINT "BUY AND SELL STOCKS IN ORDER TO MAKE"
90  PRINT "MONEY.  YOU START WITH $100,000.  THERE"
100  PRINT "IS A SELECTION OF 10 STOCKS THAT YOU "
110  PRINT "CAN INVEST IN.  YOU CAN BUY OR SELL AS"
120  PRINT "MANY SHARES AS YOU HAVE MONEY FOR."
130  PRINT "YOU CAN TELL HOW THE MARKET IS DOING"
140  PRINT "BY WATCHING THE TV REPORTS.
150  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
160  GET K$
170  DIM N$(10): DIM P(10)
180 AC = 100000:NW = AC
190  FOR K = 1 TO 10
200  READ N$(K): READ P(K)
210  NEXT K
220  HOME : PRINT M$
230  FOR K = 1 TO 10
240  HTAB 3: PRINT K;
250  HTAB 6: PRINT N$(K);
260  HTAB 31: PRINT P(K)
270  NEXT K
280  PRINT
290  INVERSE : PRINT "YOUR NET WORTH IS $"NW
300  NORMAL : PRINT
310  PRINT "WANT A PORTFOLIO REPORT (Y/N)? ";
320  GET K$
330  IF K$ = "N" THEN 420
340  IF K$ <  > "Y" THEN 320
350  HOME : PRINT M$
360  FOR K = 1 TO 10
370  PRINT K;
380  HTAB 6: PRINT N$(K);
390  HTAB 31: PRINT H(K)
400  NEXT K
410  GOSUB 1140
420  GOSUB 1210
430  PRINT "DO YOU WISH TO BUY ANY STOCKS (Y/N)? ";
440  GET K$
450  GOSUB 1210
460  IF K$ = "N" THEN 670
470  IF K$ <  > "Y" THEN 420
```

```
480  GOSUB 1130
490  GOSUB 1210
500  PRINT "WHICH ONE (1-10)? ";
510  INPUT "";L
520  IF L < 1 OR L > 10 THEN 490
530  GOSUB 1210
540  PRINT "HOW MANY SHARES OF #"L" AT $"P(L)
550  INPUT W
560 R = P(L) * W
570  PRINT "THE PRICE IS $"R
580  FOR T = 1 TO 1000: NEXT T
590  IF R < AC THEN 630
600  PRINT "YOU DON'T HAVE ENOUGH MONEY"
610  FOR T = 1 TO 1000: NEXT T
620  GOTO 420
630 AC = AC - R
640  GOSUB 1140
650 H(L) = H(L) + W
660  GOSUB 1210
670  PRINT "DO YOU WISH TO SELL ANY SHARES (Y/N)? ";
680  GET K$
690  IF K$ = "N" THEN 850
700  IF K$ <  > "Y" THEN 680
710  GOSUB 1210
720  PRINT "WHICH STOCK (1-10)? ";
730  INPUT "";D
740  IF D > 10 OR D < 1 THEN 720
750  GOSUB 1210
760  PRINT "YOU HAVE "H(D)" SHARE";
770  IF H(D) <  > 1 THEN  PRINT "S";
780  PRINT " OF STOCK #"D
790  PRINT "HOW MANY DO YOU WISH TO SELL? ";
800  INPUT "";Q
810  IF Q <  = H(D) THEN 840
820  PRINT "YOU DON'T HAVE THAT MANY SHARES"
830  GOTO 670
840 AC = AC + P(D) * Q:H(D) = H(D) - Q
850  GOSUB 1140
860  PRINT "WANT TO QUIT NOW (Y/N)?"
870  GET K$: IF K$ = "N" THEN 920
880  IF K$ <  > "Y" THEN 870
890  HOME : PRINT M$: PRINT : PRINT
900  PRINT "YOUR NET WORTH IS:"NW
910  HOME : END
920  PRINT : PRINT "STAY TUNED FOR ANOTHER MARKET REPORT"
930  FOR T = 1 TO 500
940  IF  RND (1) > .3 THEN CLK =  PEEK ( - 16336)
950  NEXT T
960  CALL ( - 198): CALL ( - 198)
970  FOR K = 1 TO 10
980 P(K) =  INT ( RND (1) * 2 * P(K)) + 5
990  NEXT K
1000 NW = AC
1010  FOR K = 1 TO 10:NW = NW + H(K) * P(K): NEXT K
1020  GOTO 220
1030  DATA  AMERICAN GONG TELEPHONE,70
```

```
1040  DATA  JIM ANTELOPE FARM EQUIP.,40
1050  DATA  COLONEL MOTORS,75
1060  DATA  LEMON COMPUTER,40
1070  DATA  MCRONALDS HAMBURGER,65
1080  DATA  OKLAHOMA INSTRUMENTS,7
1090  DATA  PACIFIC POORFIELD OIL,45
1100  DATA  286TH NAT. BANK,30
1110  DATA  USELESS AIRLINES,30
1120  DATA  XYZ TV NETWORK,75
1130  PRINT
1140  HTAB 1: VTAB 17
1150  PRINT  SPC( 39): VTAB 17: HTAB 1
1160  INVERSE
1170  PRINT "YOU HAVE $"AC" IN CASH";
1180  NORMAL
1190  GOSUB 1210
1200  RETURN
1210  PRINT : VTAB 19
1220  FOR N = 1 TO 5: PRINT  SPC( 39)
1230  NEXT N
1240  VTAB 19: HTAB 1
1250  RETURN
```

Program 98 HEADLINE GENERATOR

It ain't what you say, it's how you say it.

—Overheard in the editorial office of the *Daily Blatt*

```
10  REM  ** COMPUTER-GENERATED HEADLINES **
20  REM
30  TEXT : HOME : DIM R$(100,3)
40  FOR N = 0 TO 11:X$ = X$ +  CHR$ (32): NEXT N
50  FOR N = 0 TO 39:Y$ = Y$ + "=": NEXT N
60 M1$ = X$ + "TODAY'S HEADLINES" +  CHR$ (13) + Y$
70  PRINT M1$: PRINT
80  PRINT "THIS PROGRAM SUGGESTS HEADLINES FOR"
90  PRINT "THE DAY'S NEWSPAPER. IT IS YOUR NEWS-"
100  PRINT "PAPER, AND YOU ARE THE EDITOR-IN-CHIEF."
110  PRINT : PRINT "SIMPLY FOLLOW SOME INSTRUCTIONS"
120  PRINT "THAT WILL SOON APPEAR ON THE SCREEN."
130  PRINT "THE COMPUTER WILL DO EVERYTHING ELSE"
140  PRINT "AFTER THAT."
150  PRINT : PRINT : FLASH : PRINT "NOTICE:";
160  NORMAL : PRINT "THE AUTHORS OF THIS PROGRAM"
170  PRINT "CANNOT BE SUED FOR ANY LIBELOUS HEAD-"
180  PRINT "LINES THAT YOUR COMPUTER MIGHT"
190  PRINT "GENERATE!"
200  VTAB 21: PRINT "STRIKE ANY KEY TO BEGIN ...";
210  GOSUB 670
220  HOME : PRINT M1$: PRINT "WHAT IS YOUR NAME";
230  INPUT N$
240  IF  LEN (N$) > 0 AND  LEN (N$) < 25 THEN 280
250  PRINT "AWW, CUT IT OUT. BE REAL. TRY AGAIN ...": GOTO 230
260 X$ = ""
270  FOR N = 0 TO ( LEN (N$) + 10) / 2:X$ = X$ +  CHR$ (32): NEXT N
280 M1$ = X$ + N$ + "'S GAZETTE" +  CHR$ (13) + Y$
290  PRINT : PRINT "THAT'S A GOOD START."
300  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";: GOSUB 670
310  HOME : PRINT M1$
320  PRINT "ENTER SOME NOUNS SUCH AS:"
330 W = 1: GOSUB 540:N = 1
340  HOME : PRINT M1$
350  PRINT "ENTER SOME VERBS SUCH AS:"
360 W = 2: GOSUB 540:N = 1
370  HOME : PRINT M1$
380  PRINT "ENTER SOME DIRECT OBJECTS SUCH AS:"
390 W = 3: GOSUB 540:N = 1
400  HOME : PRINT M1$: PRINT
410  FOR M = 1 TO 3
420  PRINT R$( INT (N(M) *  RND (1)) + 1,M) + " ";
430  NEXT M
440  HTAB 1: VTAB 20
450  PRINT "STRIKE THE SPACE BAR TO SEE ANOTHER"
460  PRINT "HEADLINE (OR THE X KEY TO END THIS"
470  PRINT "PROGRAM) ...";
480  GOSUB 670
```

```
490  IF K$ = "X" THEN  HOME : END
500  GOTO 400
510  DATA  CAT,DOG,MOUSE,ELEPHANT,SHOOTS,MEETS
520  DATA  BEATS UP,FALLS IN LOVE WITH
530  DATA  SELF,HOUSE,TURTLE,LITTLE BUG
540  PRINT
550  FOR N = 1 TO 4: READ M$: PRINT  TAB( 3)M$: NEXT N
560  PRINT : PRINT "YOU CAN ENTER AS MANY AS 100 OF THEM"
570  PRINT "-- THE MORE, THE BETTER. JUST END YOUR"
580  PRINT "LIST WITH ###.": PRINT
590 N = 1
600  HTAB 1: VTAB 15
610  IF  PEEK (37) > 21 THEN 600
620  HTAB 1: CALL  - 868
630  PRINT N" -- ";: INPUT "";R$
640  IF R$ = "" OR N = 1 AND R$ = "###" THEN 610
650  IF R$ = "###" OR N >  = 100 THEN N(W) = N - 1: RETURN
660 R$(N,W) = R$:N = N + 1: GOTO 610
670  GET K$: RETURN
```

Program 99 KING PONG

Times do not change games, but rather the patience with which they are played.

—Earle C. Bootington

```
10  REM  ** KINGPONG **
20  REM
30  FOR K = 1 TO 16:M$ = M$ +  CHR$ (32): NEXT K
40 M$ = M$ + "KINGPONG" +  CHR$ (13)
50  FOR K = 1 TO 40:M$ = M$ + "*": NEXT K
60  TEXT : HOME : PRINT M$
70  PRINT : PRINT "HI THERE, MY NAME IS KEVIN.  I WORK"
80  PRINT "FOR DAVID L. HEISERMAN.  DAVE IS ALWAYS"
90  PRINT "CHANGING MY PROGRAMS, TRYING TO MAKE"
100  PRINT "THEM BETTER AND BETTER.  THIS IS A "
110  PRINT "PROGRAM THAT DAVE (OR YOU FOR THAT "
120  PRINT "MATTER) CAN EASILY CHANGE TO SUIT YOUR"
130  PRINT "OWN TASTE. "
140  PRINT : PRINT "THE BASIC GAME IS THE FAMILIAR 'PONG'"
150  PRINT "GAME. YOU CAN USE THE MENUES (SIC) TO
160  PRINT "SELECT THE COLORS AND SPEED OF THE"
170  PRINT "GAME."
180  PRINT : PRINT  TAB( 5)"-- KEVIN"
190  VTAB 21: PRINT "STRIKE ANY KEY ...";
200  GET K$
210  HTAB 1: VTAB 13
220  CALL  - 198: CALL  - 958
230  PRINT "I DIDN'T CHANGE THIS ONE (VERY MUCH)."
240  PRINT : PRINT  TAB( 5)"-- DAVE"
250  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE ...";
260  GET K$
270  FOR N = 1 TO 8: READ CA$(N)
280  READ CC(N): NEXT N
290 A$ = "FIELD"
300 NI = 8: GOSUB 1090
310 FC = CD:A$ = "BALL": GOSUB 1090
320 BC = CD:A$ = "PADDLE": GOSUB 1090
330 PC = CD: HOME : PRINT M$: PRINT
340  PRINT : PRINT "HOW FAST SHOULD THE BALL TRAVEL (1-5)";
350  GET K$
360  IF K$ < "1" OR K$ > "5" THEN  CALL  - 198: GOTO 350
370 SD =  VAL (K$) * 20
380  HOME : GR
390 PP = 0:CS = 0
400  COLOR= FC
410  FOR H = 0 TO 39: VLIN E0,39 AT H: NEXT H
420  COLOR= PC
430  VLIN 0,39 AT 0: HLIN 0,39 AT 0
440  HLIN 0,39 AT 1: HLIN 0,39 AT 39
450  HLIN 0,39 AT 38: VLIN 0,39 AT 1
460 DF =  - 1:DR = 0
470 PS = 20
480 X = 20:Y = 20:NX = 20:NY = 20
```

```
490 DR =  INT ( RND (1) * 4 - 2)
500  FOR T = SD TO 101: NEXT T
510 K =  PEEK ( - 16384): POKE  - 16368,0
520  GOSUB 930
530  COLOR= BC
540 NX = X + DF:NY = Y + DR
550  IF  SCRN( NX,NY) <  > PC THEN 860
560  IF NX = 35 AND  ABS (PS - NY) < 2 THEN PP = PP + 1
570  IF NX > 2 AND NX < 34 THEN DR = DR *  - 1: GOTO 690
580  IF NX < 3 OR NX > 34 THEN DF = DF *  - 1
590  IF X < 35 THEN 660
600 CS = CS + 1
610 X = 20:NX = 20:Y = 20:NY = 20
620 DF =  - 1
630  FOR T = 1 TO 100
640 CK =  PEEK ( - 16336): NEXT T
650  FOR T = 1 TO 500: NEXT T
660  IF DR > 0 THEN DR =  INT ( RND (1) * 3)
670  IF DR < 0 THEN DR =  -  INT ( RND (1) * 3): GOTO 690
680  IF DR = 0 THEN DR =  INT ( RND (1) * 3 - 1)
690  CALL  - 198
700  IF PP < 21 AND CS < 21 THEN 810
710  TEXT : HOME : PRINT M$
720  PRINT : PRINT : CALL  - 198: CALL  - 198: FLASH
730  IF PP >  = 21 THEN  PRINT : PRINT "** YOU WIN **"
740  IF CS >  = 21 THEN  PRINT : PRINT " * THE COMPUTER WON *"
750  NORMAL : PRINT : PRINT
760  PRINT "WOULD YOU LIKE TO PLAY AGAIN (Y/N)";
770  GET K$
780  IF K$ = "Y" THEN 380
790  IF K$ = "N" THEN  HOME : END
800  CALL  - 198: GOTO 770
810  HOME : PRINT "YOU HAVE "PP" PTS." SPC( 10);
820  PRINT "D=DOWN"
830  PRINT : PRINT "COMPUTER HAS "CS" PTS." SPC( 6);
840  PRINT "U=UP"
850  GOTO 540
860  COLOR= FC: PLOT X,Y: COLOR= BC
870 X = NX:Y = NY
880  IF NX > 35 THEN 570
890  PLOT NX,NY
900  GOTO 500
910 K =  PEEK ( - 16384)
920  POKE  - 16368,0
930  IF K <  > 213 THEN 1010
940  COLOR= FC
950  VLIN PS - 1,PS + 1 AT 35
960 PS = PS - 2: COLOR= PC
970  IF PS < 2 THEN PS = PS + 2
980  IF PS = 2 THEN PS = PS + 1
990  VLIN PS - 1,PS + 1 AT 35
1000  GOTO 1080
1010  IF K <  > 196 THEN 1080
1020  COLOR= FC
1030  VLIN PS - 1,PS + 1 AT 35
1040 PS = PS + 2: COLOR= PC
```

```
1050  IF PS > 37 THEN PS = PS - 2
1060  IF PS = 37 THEN PS = PS - 1
1070  VLIN PS - 1,PS + 1 AT 35
1080  RETURN
1090  HOME : PRINT M$
1100  FOR N = 1 TO NI
1110  PRINT : PRINT  TAB( 10)N SPC( 3)CA$(N)
1120  NEXT N
1130  PRINT
1140  PRINT "SELECT A COLOR FOR THE "A$"(1-8)";
1150  GET K$
1160  IF K$ < "1" OR K$ > "8" THEN 1150
1170 K =  VAL (K$):CD = CC(K)
1180  RETURN
1190  DATA  BLACK,0,DARK BLUE,2,LIGHT BLUE,7
1200  DATA  GREEN,12,ORANGE,9,GREY,5,YELLOW,13,WHITE,15
```

Program 100 ADVENTURE REVISITED

Adventure is not outside a man; it is within.

—David Grayson

```
10  REM  ** ADVENTURE REVISITED **
20  REM
30  FOR N = 1 TO 40:Y$ = Y$ + "=": NEXT N
40  TEXT : HOME
50  PRINT "THIS IS ORIGINAL ADVENTURE #12556789.
60  PRINT "I AM YOUR PUPPET AND YOU CAN"
70  PRINT "TELL ME TO MOVE AROUND. TO GET THINGS,"
80  PRINT "GO SOUTH,GO EASY,TAKE INVENTORY AND OTHER"
90  PRINT "THINGS THAT YOU KNOW BECAUSE YOU PLAID"
100  PRINT "PREVIOUS 12556788 FAMOUS ADVENTURES."
110  PRINT
120  PRINT "WE HAVE TO DISCUSS SOMETHING VERY IM-"
130  PRINT "PORTANT FIRST, THO."
140  GOSUB 670: GOSUB 710
150  HOME
160  CALL  - 198
170  PRINT "YOU LOVE YOUR MOM, DONT YOU?"
180  GOSUB 670
190  PRINT "OF COURSE YOU DO!"
200  CALL  - 198: PRINT
210  PRINT "YOU LOVE YOUR COUNTRY DONT YOU??"
220  GOSUB 670
230  PRINT "OF COURSE YOU DO!!"
240  CALL  - 198: PRINT
250  PRINT "AND YOU LOVE APPLE PIE, DONT YOU??"
260  GOSUB 670
270  PRINT "OF COURSE YOU DOO!!!!!!"
280  FOR N = 1 TO 2: CALL  - 198: GOSUB 670: NEXT N
290  PRINT : PRINT "WELL THIS IS A MOM, COUNTRY AND APPLE
300  PRINT "PIE OPERATION. AND I SPENT YEARS AND YEARS
310  PRINT "MAKING THIS PROGRAM!!!!!"
320  FOR N = 1 TO 2: CALL  - 198: GOSUB 670: NEXT N
330  FLASH : PRINT "SO DO NOT ACCEPT A PIRATED COPY OF"
340  PRINT "PROGRAM!!!!!!!"
350  NORMAL
360  FOR N = 1 TO 10: CALL  - 198: NEXT N
370  PRINT
380  PRINT "OR ILL GET MAD!!!!!!!!!!"
390  PRINT : PRINT "WELL, HAPPY ADVENTURER, HIT THE ENTER KEY"
400  PRINT "TO START THIS ADVENTURE"
410  PRINT "(IF YOU DONT KNOW WHAT THE ENTER KEY IS IT"
420  PRINT "MEANS THAT YOU DONT HAVE A TRS-80)"
430  GET K$
440  HOME
450  PRINT "YOU ARE STANDING IN FRONT OF A SPOOKY"
460  PRINT "OLD HOUSE."
470  PRINT Y$
480  PRINT "VISIBLE ITEMS:";
```

```
490  FOR N = 1 TO 11: READ D$
500  PRINT D$",";
510  NEXT N
520  HTAB 1: VTAB 19
530  PRINT Y$
540  PRINT "COMMANDS ARE: (N)ORTH,(S)OUTH,(E)AST
550  PRINT "(W)EST,(G)ET,TAKE (I)NVENTORY
560  HTAB 1: VTAB 8
570  PRINT "WHAT SHOULD I DO?";
580  GET K$
590  GOSUB 670
600  PRINT : PRINT "A LARGE TREE FELL ON YOUR HEAD!!!!"
610  PRINT "YOURE DEAD -- DEAD, DEAD,DEAD!!!!!!"
620  PRINT : PRINT "THIS ADVENTURE IS OVER."
630  PRINT "YOU TOOK 1 STEPS"
640  PRINT "YOU FOUND Ø TREASURES"
660  END
670  FOR T = 1 TO 2000: NEXT T: RETURN
680  DATA  LARGE KEY,SMALL KEY,BRASS KEY,IRON KEY,GOLD KEY
690  DATA  MONKEY,OLD GUM,LARGE GUM,SMALL GUM,BRASS MONKEY
700  DATA  IRON GUM
710  VTAB 21: PRINT "STRIKE ANY KEY TO CONTINUE";
720  GET K$
730  RETURN
```

Program 101 GOOD-BYE

So much for the nonsense. Now we gotta get back to work.
—Overheard from a private office in Columbus, Ohio

```
10  REM  ** GOOD-BYE **
20  REM
30  FOR K = 1 TO 40:MH$ = MH$ + "*": NEXT K
40  FOR N = 1 TO 63
50  READ D:M$ = M$ +  CHR$ (D)
60  NEXT N
70 M$ = M$ + "GOOD-BYE ..."
80 M$ = M$ + "(STRIKE ANY KEY TO SAY 'GOOD-BYE' TO ME.)
90 N$ = ""
100  FOR K = 1 TO 40:N$ = " " + N$: NEXT K
110 M$ = N$ + M$
120  TEXT : HOME
130  HTAB 1: VTAB 10: PRINT MH$
140  HTAB 1: VTAB 14: PRINT MH$
150  INVERSE
160  FOR N = 2 TO  LEN (M$)
170 P$ =  MID$ (M$,N) +  LEFT$ (M$,N - 1)
180  VTAB 12: HTAB 1
190  PRINT  LEFT$ (P$,40)
200  FOR T = 1 TO 20
210  IF T < 10 THEN G =  PEEK ( - 16336)
220  NEXT T
230 K =  PEEK (49152): POKE 49168,0
240  IF K > 127 THEN  NORMAL : HOME : END
250 G =  PEEK ( - 16336)
260  NEXT N
270  FOR G = 1 TO 3: CALL  - 198: NEXT G
280  GOTO 160
290  DATA 73,32,65,77,32,74,85,83,84,32,65,32,86
300  DATA 73,83,73,84,79,82,32,84,79,32,84,72,73
310  DATA 83,32,80,76,65,78,69,84,46,32,73,84,39
320  DATA 83,32,84,73,77,69,32,70,79,82,32,77,69
330  DATA 32,84,79,32,71,79,32,78,79,87,46
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101 Programming Surprises and Tricks for Your Apple II®/*IIe*® Computer

If you are intrigued with the possibilities of the programs included in *101 Programming Surprises and Tricks for Your Apple II, IIe Computer* (TAB Book No.1721), you should definitely consider having the ready-to-run disk containing the software applications. This software is guaranteed free of manufacturer's defects. (If you have any problems, return the disk within 30 days, and we'll send you a new one.) Not only will you save the time and effort of typing the programs, the disk eliminates the possibility of errors that can prevent the programs from functioning. Interested?

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101 Programming Surprises & Tricks for Your Apple II®/*IIe*® Computer

by David L. Heiserman

Are you tired of finding the same old collections of games and puzzles in every book you pick up?

Do you wish someone would come up with a new group of entertainment programs designed especially to take advantage of your Apple's text, graphics, color, and sound capabilities?

Then you're in for a very pleasant surprise! This exciting new collection of games, novelties, and programming marvels is fresh, literate, and packed with all kinds of unique and downright amazing ways to have fun with your computer! Best of all each program has been designed to take fullest advantage of your Apple's most advanced capabilities—sound, graphics, color, and text!

Here's where you'll find music and sound programs, animated graphics, one- and two-player games, one-of-a-kind novelties, *and more!* Unlike many programming guides, this one makes no attempt to instruct you—although you'll discover some extremely clever programming tricks that you'll be able to use for more serious programming applications. Instead, the object is to entertain and be entertained!

This is where you'll find programs that are the perfect way to relax when you're tense and overworked . . . programs that provide that much-needed break after hours of serious business or educational programming.
With the barest amount of commentary accompanying each program, you'll never be quite sure what to expect . . . and that's the fun part!

Programs range from short, simple novelties to full-length games for you and another player. There are animated graphics, games suitable for youngsters (with variations that make them interesting enough for the most sophisticated player), programs that poke fun at the computer and at computer users, music and sound effects that are really different, new versions of popular game simulations, and some highly original games you won't find *anywhere else!*

David L. Heiserman is a writer, teacher, computerist, and R & D consultant who has written several best-selling books for TAB including *Projects in Machine Intelligence for Your Home Computer.*

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